# 13.7587300 JAP6 Rec'd PCT/PTO 26 JUL 2006

#### SEQUENCE LISTING

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<110> Yule, D.I.
      Wagner II, Larry
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<130> 21108.0042U2
<150> PCT/US2005/002380
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Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
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Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
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Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
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Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
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                                         155
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
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Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
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                                                     190
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
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Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
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Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
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Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
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His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
                       295
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
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                                       315
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
                                   330
               325
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
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                               345
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
                           360
                                                365
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
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                                            380
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
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                                       395
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu
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Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
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Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
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Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
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Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
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Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
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Arq His Ala Pro Phe Arq His Ile Cys Arg Leu Cys Tyr Arg Val Leu
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Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
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Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
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                                               685
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
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Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
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		755					Asp 760					765			
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		835					Val 840					845			
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				885			Thr		890					895	
			900				Phe	905					910		
		915					Val 920				:	925			
	930					935	Leu				940				
945					950		Glu			955					960
				965			Met		970		٠.			975	
	•		980				Val	985	•			+	990		
		995					Glu 1000	)				100	5		
Ser	G1u 1010		Ser	ser	GIY	101	Ser 5	ser	GIN	GIU	102		ser	ASII	vaı.
1025	5				103	0	His			103	5				1040
	-			104	5		Thr		105	0				105	5
			106	0				106	5				107	0	Tyr
		107	5				Leu 108	0				108	5		
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		115	5				Ser 116	0				116	5		
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Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
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Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
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Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
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His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
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Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
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Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
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1345 1350
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
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His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
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Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
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   1395
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
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          1415
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
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Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
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Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
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Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
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                   1655
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Thr Ser Arg 1745	Gly Glu	Met Ser 1750	Leu	Ala	Glu	Val 1755		Cys	His	Leu	Asp 1760
Lys Glu Gly	Ala Ser 176		Val		Asp 1770		Ile	Met	Asn	Ala 1775	
Ser Asp Arg	Val Phe 1780	His Glu	Ser	Ile 1785		Leu	Ala	Ile	Ala 1790		Leu
Glu Gly Gly 1795			1800	1				1805	5		
Glu Asp Lys 1810		181	5				1820				
Lys Val Ala 1825		1830				1835					1840
Asp Leu Gly	184	5			1850	)				1855	5
	1860			1865	;				1870	)	
Arg Asp Gln 1875			1880	)				1885	5		
Thr Phe Arg 1890		189	5				1900	)			
Gly Thr Gln 1905		1910	_		-	1915	;				1920
Ala Val Ile	192	5			1930	)				1935	5
	1940			1945	5				1950	)	
Asn Lys Thr 1955			1960	)				1965	5		
Cys Ile Cys 1970		197	5				1980	)			
Ile Asn Glu 1985	Ā A	1990				1995	5				2000
Thr Glu Tyr	200	5			2010	)				2015	5
Thr His Glu	2020			2025	5				2030	)	
Asp Ile Asn 2035	i		2040	)				2045	5		
Lys Asn Asn 2050		205	5				2060	)			
Asp Ser Glu 2065		2070				2075	5				2080
Leu Val Glu	208		Ala	TÅT	2090		GIY	Giu	vaı	209	5
			λαν	C1.,			cor	Dro	7~~		7727
	Glu Asn 2100	Gly Glu		2105	Ala 5	Ala			2110	Asn )	
Gly His Asn 2115	Glu Asn 2100 Ile Tyr	Gly Glu	Ala 2120	2105 His	Ala Gln	Ala Leu	Ala	Arg 2125	2110 His	Asn ) Asn	Lys
Gly His Asn 2115 Glu Leu Gln 2130	Glu Asn 2100 Ile Tyr Thr Met	Gly Glu Ile Leu Leu Lys 213	Ala 2120 Pro 5	2105 His ) Gly	Ala Gln Gly	Ala Leu Gln	Ala Val 2140	Arg 2125 Asp	2110 His 5 Gly	Asn ) Asn Asp	Lys Glu
Gly His Asn 2115 Glu Leu Gln 2130 Ala Leu Glu 2145	Glu Asn 2100 Ile Tyr Thr Met	Gly Glu Ile Leu Leu Lys 213 Ala Lys 2150	Ala 2120 Pro 5 His	2105 His ) Gly Thr	Ala Gln Gly Ala	Ala Leu Gln Gln 2155	Ala Val 2140 Ile	Arg 2125 Asp ) Glu	2110 His Gly Ile	Asn Asn Asp Val	Lys Glu Arg 2160
Gly His Asn 2115 Glu Leu Gln 2130 Ala Leu Glu	Glu Asn 2100 Ile Tyr Thr Met Phe Tyr Thr Met 216	Gly Glu  Ile Leu  Leu Lys 213  Ala Lys 2150  Glu Gln 5	Ala 2120 Pro 5 His	2105 His ) Gly Thr	Ala Gln Gly Ala Phe 2170	Ala Leu Gln Gln 2155 Pro	Val 2140 Ile Val	Arg 2125 Asp ) Glu Pro	2110 His Gly Ile Ser	Asn Asn Asp Val Ile 217	Lys Glu Arg 2160 Cys

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Asp	Leu	Phe	Asn	Glu	Met	Asn	Trp	Gln	Lys	Lvs	Leu	Ara	Ala	Gln	Pro
P	2210					2215	_		-1-	-1-	2220				
W-1			Tra	Cvc	ת ד ת			Mot	Ser	Dhe			Ser	Tla	cor
		IÀT	пр	Cys			ASII	Mec	Ser			SEL	SET	TIE	
2225					2230					2235		_			2240
Phe	Asn	Leu	Ala	Val 2245		Met	Asn	Leu	Leu 2250		Ala	Phe	Phe	Tyr 2255	
Phe	Lys	Gly	Val 2260	_	Gly	Gly	Thr	Leu 2265	Glu	Pro	His	Trp	Ser 2270	_	Leu
Len	Trn	Thr	Δla	Met	T.eu	Tle	Ser	Len	Ala	Tle	Val	Tle	Δla	Len	Pro
DCu	TTP	2275		1100	LCu		2280		1114			2285		LCu	110
T	D			T1.	7	77.			77.	C ~ ~	mb ~			7	T 0
гуѕ			GTA	TTe	Arg			me	Ala	ser			ьеu	Arg	ьец
	2290					2295					2300				
Ile	Phe	Ser	Val	Gly	Leu	Gln	Pro	Thr	Leu	Phe	Leu	Leu	Gly	Ala	Phe
2305	5				2310	)				2315	;				2320
Asn	Val	Cvs	Asn	Lvs	Ile	Ile	Phe	Leu	Met	Ser	Phe	Val	Glv	Asn	Cvs
		-1-		2325					2330				1	2335	_
<b>a</b> 1	mb	Dho	mb se			Mr ***	7				T 011	7 ~~	T - 17		
GIY	TIII	Pile		_	GIY	TÄT	Arg		Met	vaı	Leu	Asp			Pile
			2340					2345					2350		
Leu	Tyr	His	Leu	Leu	Tyr	Leu	Leu	Ile	Cys	Ala	Met	Gly	Leu	Phe	Val
		2355	5				2360	)				2365	;		
His	Glu	Phe	Phe	Tvr	Ser	Leu	Leu	Leu	Phe	Asp	Leu	Val	Tvr	Ara	Glu
	2370			-1-		2375				<b>L</b>	2380		_1_	3	
<i>α</i> 1			T 011	7 an	17.7	-		Cox	Val	Th.			C1	7 ~~~	Dro
		Leu	ьец	ASII			пур	ser	vaı		_	ASII	GTA	Arg	
2385					2390				_	2395					2400
Ile	Ile	Leu	Thr	Ala	Ala	Leu	Ala	Leu	Ile	Leu	Val	Tyr	Leu	Phe	Ser
				2405	5				2410	)				2415	i
Ile	Val	Glv	Tyr	Leu	Phe	Phe	Lys	Asp	Asp	Phe	Ile	Leu	Glu	Val	Asp
		-	2420				-	2425	_				2430		_
Δνα	T.em	Dro			Thr	αΙα	Glv		Glu	Thr	Glv	Glu			Δla
Arg	пси			Giu	1111	ATG	_		Giu	1111	Gry			пси	AIG
_	_	2435		_	_	_	2440		_			2445			_
Asn	Asp	Phe	Leu	Tyr	Ser	_		Cys	Arg	Val			GIŸ	GLu	Asn
	2450	)				2455	5				2460	)			
Cys	Thr	Ser	Pro	Ala	Pro	Lys	Glu	Glu	Leu	Leu	Pro	Val	Glu	Glu	Thr
2465					2470	_				2475					2480
Glu	Gln	Asp	Laze	<b>63.</b> 1				~-7	_1						
Olu	OIII				Hic	Thr	Cvc	(4111	'l'hr	Len	Len	Met	Cve	Tle	Val
m1		-	цуз			Thr	Cys	GIu			Leu	Met	Cys	Ile	
Thr	**- 7	_	_	2485	5				2490	)			_	2495	;
	Val	_	Ser	2485 His	5			Ser	2490 Gly	)			Gly	2495 Asp	;
		Leu	Ser 2500	2485 His )	Gly	Leu	Arg	Ser 2505	2490 Gly	Gly	Gly	Val	Gly 2510	2495 Asp )	Val
Leu		Leu	Ser 2500	2485 His )	Gly	Leu	Arg	Ser 2505	2490 Gly	Gly	Gly	Val	Gly 2510	2495 Asp )	Val
Leu		Leu	Ser 2500 Pro	2485 His )	Gly	Leu	Arg	Ser 2509 Pro	2490 Gly	Gly	Gly	Val	Gly 2510 Arg	2495 Asp )	Val
	Arg	Leu Lys 2515	Ser 2500 Pro	2485 His ) Ser	Gly Lys	Leu Glu	Arg Glu 2520	Ser 2509 Pro	2490 Gly Leu	Gly Phe	Gly Ala	Val Ala 2525	Gly 2510 Arg	2495 Asp ) Val	Val Ile
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Tyr	Arg Asp 2530	Leu Lys 2515 Leu	Ser 2500 Pro Leu	2485 His Ser	Gly Lys Phe	Leu Glu Phe 2535	Arg Glu 2520 Met	Ser 2505 Pro ) Val	2490 Gly Leu Ile	Gly Phe Ile	Gly Ala Ile 2540	Val Ala 2525 Val	Gly 2510 Arg Leu	2495 Asp ) Val Asn	Val Ile Leu
Tyr Ile	Arg Asp 2530 Phe	Leu Lys 2515 Leu	Ser 2500 Pro Leu	2485 His Ser	Gly Lys Phe	Leu Glu Phe 2535 Asp	Arg Glu 2520 Met	Ser 2505 Pro ) Val	2490 Gly Leu	Gly Phe Ile Asp	Gly Ala Ile 2540 Leu	Val Ala 2525 Val	Gly 2510 Arg Leu	2495 Asp ) Val Asn	Val Ile Leu Lys
Tyr	Arg Asp 2530 Phe	Leu Lys 2515 Leu	Ser 2500 Pro Leu	2485 His Ser	Gly Lys Phe	Leu Glu Phe 2535 Asp	Arg Glu 2520 Met	Ser 2505 Pro ) Val	2490 Gly Leu Ile	Gly Phe Ile	Gly Ala Ile 2540 Leu	Val Ala 2525 Val	Gly 2510 Arg Leu	2495 Asp ) Val Asn	Val Ile Leu
Tyr Ile 2545	Arg Asp 2530 Phe	Leu Lys 2515 Leu ) Gly	Ser 2500 Pro Leu Val	2485 His Ser Phe	Gly Lys Phe Ile 2550	Leu Glu Phe 2535 Asp	Arg Glu 2520 Met Thr	Ser 2505 Pro Val Phe	2490 Gly Leu Ile	Gly Phe Ile Asp 2555	Gly Ala Ile 254( Leu	Val Ala 2525 Val Arg	Gly 2510 Arg Leu Ser	2495 Asp Val Val Glu	Val Ile Leu Lys 2560
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Tyr Ile 2545 Gln	Arg Asp 2530 Phe Lys	Leu Lys 2515 Leu Gly	Ser 2500 Pro Leu Val	2485 His Ser Phe Ile Glu 2565	Gly Lys Phe Ile 2550 Ile	Leu Glu Phe 2535 Asp Leu	Arg Glu 2520 Met Thr	Ser 2505 Pro Val Phe	2490 Gly Leu Ile Ala Thr 2570	Gly Phe Ile Asp 2555 Cys	Gly Ala Ile 2540 Leu Phe	Val Ala 2525 Val , Arg Ile	Gly 2510 Arg Leu Ser	Asp Val Asn Glu Gly 2575	Val Ile Leu Lys 2560 Leu
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Tyr Ile 2545 Gln Glu	Arg Asp 2530 Phe Lys Arg	Leu Lys 2515 Leu Gly Lys	Ser 2500 Pro Leu Val Glu Lys 2580	2485 His Ser Phe Ile Glu 2565 Phe	Gly Lys Phe Ile 2550 Ile Asp	Leu Glu Phe 2535 Asp Leu Asn	Arg Glu 2520 Met Thr Lys	Ser 2505 Pro Val Phe Thr Thr 2585	2490 Gly Leu Ile Ala Thr 2570 Val	Gly Phe Ile Asp 2555 Cys Thr	Gly Ala Ile 2540 Leu Phe	Val Ala 2525 Val Arg Ile Glu	Gly 2510 Arg Leu Ser Cys Glu 2590	2495 Asp Val Asn Glu Gly 2575 His	Val Ile Leu Lys 2560 Leu Ile
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Tyr Ile 2545 Gln Glu	Arg Asp 2530 Phe Lys Arg	Leu Lys 2515 Leu Gly Lys	Ser 2500 Pro Leu Val Glu Lys 2580 His	2485 His Ser Phe Ile Glu 2565 Phe	Gly Lys Phe Ile 2550 Ile Asp	Leu Glu Phe 2535 Asp Leu Asn	Arg Glu 2520 Met Thr Lys	Ser 2505 Pro Val Phe Thr Thr 2585	2490 Gly Leu Ile Ala Thr 2570 Val	Gly Phe Ile Asp 2555 Cys Thr	Gly Ala Ile 2540 Leu Phe	Val Ala 2525 Val Arg Ile Glu	Gly 2510 Arg Leu Ser Cys Glu 2590 Val	2495 Asp Val Asn Glu Gly 2575 His	Val Ile Leu Lys 2560 Leu Ile
Tyr Ile 2545 Gln Glu Lys	Arg Asp 2530 Phe Lys Arg	Leu Lys 2515 Leu Gly Lys Asp Glu 2595	Ser 2500 Pro Leu Val Glu Lys 2580 His	2485 His Ser Phe Ile Glu 2565 Phe )	Gly Lys Phe Ile 2550 Ile Asp	Leu Glu Phe 2535 Asp Leu Asn	Arg Glu 2520 Met Thr Lys Lys His 2600	Ser 2505 Pro ) Val Phe Thr Thr 2585 Tyr	2490 Gly Leu Ile Ala Thr 2570 Val	Gly Phe Ile Asp 2555 Cys Thr	Gly Ala Ile 2540 Leu Phe Phe	Val Ala 2525 Val Arg Ile Glu Ile 2605	Gly 2510 Arg Leu Ser Cys Glu 2590 Val	2495 Asp Val Asn Glu 2575 His	Val Ile Leu Lys 2560 Leu Ile Val
Tyr Ile 2545 Gln Glu Lys	Arg Asp 2530 Phe Lys Arg	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys	Ser 2500 Pro Leu Val Glu Lys 2580 His	2485 His Ser Phe Ile Glu 2565 Phe )	Gly Lys Phe Ile 2550 Ile Asp	Leu Glu Phe 2535 Asp Leu Asn Trp Glu	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr	Ser 2505 Pro ) Val Phe Thr Thr 2585 Tyr	2490 Gly Leu Ile Ala Thr 2570 Val	Gly Phe Ile Asp 2555 Cys Thr	Gly Ala Ile 2540 Leu Phe Phe	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser	Gly 2510 Arg Leu Ser Cys Glu 2590 Val	2495 Asp Val Asn Glu 2575 His	Val Ile Leu Lys 2560 Leu Ile Val
Tyr Ile 2545 Gln Glu Lys Lys	Arg Asp 2530 Phe Lys Arg Glu Val 2610	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys	Ser 2500 Pro Leu Val Glu Lys 2580 His Asp	2485 His Ser Phe Ile Glu 2565 Phe Asn	Gly Lys Phe Ile 2550 Ile Asp Met	Leu Glu Phe 2535 Asp Leu Asn Trp Glu 2615	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr	Ser 2505 Pro ) Val Phe Thr 2585 Tyr )	2490 Gly Leu Ile Ala Thr 2570 Val Leu	Phe Ile Asp 2555 Cys Thr Cys	Gly Ala Ile 2540 Leu Phe Phe Phe Glu 2620	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser	Gly 2510 Arg Leu Ser Cys Glu 2590 Val	2495 Asp Val Asn Glu Gly 2575 His Leu Val	Val Ile Leu Lys 2560 Leu Ile Val
Tyr Ile 2545 Gln Glu Lys Lys Glu	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys	Ser 2500 Pro Leu Val Glu Lys 2580 His Asp	2485 His Ser Phe Ile Glu 2565 Phe Asn	Gly Lys Phe Ile 2550 Ile Asp Met Thr	Leu  Phe 2535 Asp Leu Asn Trp Glu 2615 Asn	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr	Ser 2505 Pro ) Val Phe Thr 2585 Tyr )	2490 Gly Leu Ile Ala Thr 2570 Val	Gly Phe Ile Asp 2555 Cys Thr Cys Pro	Gly Ala Ile 254( Leu Phe Phe Phe Glu 262( Pro	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser	Gly 2510 Arg Leu Ser Cys Glu 2590 Val	2495 Asp Val Asn Glu Gly 2575 His Leu Val	Val Ile Leu Lys 2560 Leu Ile Val Ala
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys Ile	Ser 2500 Pro Leu Val Glu Lys 2580 His Asp	2485 His Ser Phe Ile Glu 2565 Phe Asn Ser	Gly Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630	Leu  Phe 2535 Asp Leu  Asn Trp Glu 2615 Asn	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu	Ser 2505 Pro ) Val Phe Thr 2585 Tyr ) Thr	2490 Gly Leu Ile Ala Thr 2570 Val Leu Gly	Phe Ile Asp 2555 Cys Thr Cys Pro Phe 2635	Gly Ala Ile 254( Leu Phe Phe Phe Phe Phe Glu 262( Pro	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser Arg	Gly 2510 Arg Leu Ser Cys Glu 2590 Val Tyr	2495 Asp Val Asn Glu Cly 2575 His Leu Val Arg	Val Ile Leu Lys 2560 Leu Ile Val Ala Ala 2640
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys Ile	Ser 2500 Pro Leu Val Glu Lys 2580 His Asp	2485 His Ser Phe Ile Glu 2565 Phe Asn Ser Glu Ser	Gly Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser	Leu  Phe 2535 Asp Leu  Asn Trp Glu 2615 Asn	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu	Ser 2505 Pro ) Val Phe Thr 2585 Tyr ) Thr	2490 Gly Leu Ile Ala Thr 2570 Val Gly Trp	Phe Asp 2555 Cys Thr Cys Pro Phe 2635 Glu	Gly Ala Ile 254( Leu Phe Phe Phe Phe Phe Glu 262( Pro	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser Arg	Gly 2510 Arg Leu Ser Cys Glu 2590 Val Tyr	2495 Asp Val Asn Glu Gly 2575 His Leu Val Arg	Val Ile Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625 Met	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys Ile Leu	Ser 2500 Pro Leu Val Glu Lys 2580 His Asp Arg	2485 His Ser Phe Ile Glu 2565 Phe Asn Ser Glu Ser 2645	Gly Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser	Leu Phe 2535 Asp Leu Asn Trp Glu 2615 Asn Asp	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu Ser	Ser 2505 Pro ) Val Phe Thr 2585 Tyr ) Thr Asp	2490 Gly Leu Ile Ala Thr 2570 Val Gly Trp Gly 2650	Phe Asp 2555 Cys Thr Cys Pro Phe 2635 Glu	Gly Ala Ile 2540 Leu Phe Phe Phe Glu 2620 Pro Gln	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser Arg Asn	Gly 2510 Arg Leu Ser Cys Glu 2590 Val Tyr Met Glu	2495 Asp Val Asn Glu Gly 2575 His Leu Val Arg Leu 2655	Val Ile Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625 Met	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys Ile Leu	Ser 2500 Pro Leu Val Glu Lys 2580 His Asp Arg	2485 His Ser Phe Ile Glu 2565 Phe Asn Ser Glu Ser 2645	Gly Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser	Leu Phe 2535 Asp Leu Asn Trp Glu 2615 Asn Asp	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu Ser	Ser 2505 Pro ) Val Phe Thr 2585 Tyr ) Thr Asp	2490 Gly Leu Ile Ala Thr 2570 Val Gly Trp	Phe Asp 2555 Cys Thr Cys Pro Phe 2635 Glu	Gly Ala Ile 2540 Leu Phe Phe Phe Glu 2620 Pro Gln	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser Arg Asn	Gly 2510 Arg Leu Ser Cys Glu 2590 Val Tyr Met Glu	2495 Asp Val Asn Glu Gly 2575 His Leu Val Arg Leu 2655	Val Ile Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg
Tyr Ile 2545 Gln Glu Lys Lys Glu 2625 Met	Arg Asp 2530 Phe Lys Arg Glu Val 2610 Met	Leu Lys 2515 Leu Gly Lys Asp Glu 2595 Lys Ile Leu	Ser 2500 Pro Leu Val Glu Lys 2580 His Asp Arg	2485 His Ser Phe Ile Glu 2565 Phe Asn Ser Glu Ser 2645 Lys	Gly Lys Phe Ile 2550 Ile Asp Met Thr Arg 2630 Ser	Leu Phe 2535 Asp Leu Asn Trp Glu 2615 Asn Asp	Arg Glu 2520 Met Thr Lys Lys His 2600 Tyr Leu Ser	Ser 2505 Pro ) Val Phe Thr 2585 Tyr ) Thr Asp	2490 Gly Leu Ile Ala Thr 2570 Val Gly Trp Gly 2650 Met	Phe Asp 2555 Cys Thr Cys Pro Phe 2635 Glu	Gly Ala Ile 2540 Leu Phe Phe Phe Glu 2620 Pro Gln	Val Ala 2525 Val Arg Ile Glu Ile 2605 Ser Arg Asn	Gly 2510 Arg Leu Ser Cys Glu 2590 Val Tyr Met Glu	2495 Asp Val Asn Glu Gly 2575 His Leu Val Arg Leu 2655 Asn	Val Ile Leu Lys 2560 Leu Ile Val Ala Ala 2640 Arg

2680 2675 Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val 2695 Asn Pro Gln Gln Pro Ala 2705 2710 <210> 2 <211> 2749 <212> PRT <213> Artificial Sequence <220> <223> Description of Artificial Sequence:/note = synthetic construct <400> 2 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly . 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 125 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 205 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Asp Val Val 235 230 Arg Leu Phe His Ala Glu Glu Lys Phe Leu Thr Cys Asp Glu His 250 245 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 300 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 310 315 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 325 330

Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val 345

340

Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val

835			840					845			
Cys Gln Arg Pho 850	e Pro Phe	Ser 855	Asp	Lys	Glu	Lys	Asn 860	Lys	Leu	Thr	Phe
Glu Val Val Ass 865	n Leu Ala 870	Arg	Asn	Leu	Ile	Tyr 875	Phe	Gly	Phe	Tyr	Asn 880
Phe Ser Asp Le	ı Leu Arg 885	Leu	Thr	Lys	Ile 890	Leu	Leu	Ala	Ile	Leu 895	Asp
Cys Val His Val		Ile	Phe	Pro 905	Ile	Ser	Lys	Met	Thr 910	Lys	Gly
Glu Glu Asn Ly: 915	Gly Ser	Asn	Val 920	Met	Arg	Ser	Ile	His 925	Gly	Val	Gly
Glu Leu Met Th	r Gln Val	Val 935	Leu	Arg	Gly	Gly	Gly 940	Phe	Leu	Pro	Met
Thr Pro Met Ala	950			_		955					960
Glu Lys Glu As	965				970			_		975	
Ile Leu Gln Pho	)			985		_	_		990		_
Leu Leu Cys Ilo 995			1000	)				1005	5		
Ser Glu Thr Ser 1010		1015	5				1020	)			
Pro Gly Ala Lei 1025	103	0				1035	5			_	1040
Phe Gly Gly Se	1045				1050	)				1059	5
Gly Arg Thr Pho	50			1065	5				1070	)	
Pro Pro Leu Va 1075			1080	)				1085	5		
01m 3mm 01m 02.	. tr. 7 r	G1	7.7 -	D1	T	O17	77-3	~ T	T	T	77-7
Gln Arg Gln Gli 1090		1095	5				1100	)			
1090 Thr Ser Gln As 1105	o Val Asp 111	1095 Asn 0	Tyr	Lys	Gln	Ile 1115	1100 Lys	) Gln	Asp	Leu	Asp 1120
1090 Thr Ser Gln As 1105 Gln Leu Arg Se	Val Asp 111 Tle Val 1125	1095 Asn O Glu	Tyr Lys	Lys Ser	Gln Glu 1130	Ile 1115 Leu	1100 Lys Trp	Gln Val	Asp Tyr	Leu Lys 1135	Asp 1120 Gly
1090 Thr Ser Gln Asp 1105 Gln Leu Arg Ser Gln Gly Pro Asp	Val Asp 111 r Ile Val 1125 p Glu Pro	1095 Asn O Glu Met	Tyr Lys Asp	Lys Ser Gly 1145	Gln Glu 1130 Ala	Ile 1115 Leu Ser	1100 Lys Trp Gly	Gln Val Glu	Asp Tyr Asn 1150	Leu Lys 1135 Glu	Asp 1120 Gly His
1090 Thr Ser Gln As; 1105 Gln Leu Arg Se: Gln Gly Pro As; 114 Lys Lys Thr Gli 1155	Val Asp 111 r Ile Val 1125 o Glu Pro 10 1 Glu Gly	1095 Asn O Glu Met	Tyr Lys Asp Ser 1160	Lys Ser Gly 1145 Lys	Gln Glu 1130 Ala Pro	Ile 1115 Leu Ser Leu	Lys Trp Gly	Gln Val Glu His	Asp Tyr Asn 1150 Glu	Leu Lys 1135 Glu ) Ser	Asp 1120 Gly His
1090 Thr Ser Gln As; 1105 Gln Leu Arg Se: Gln Gly Pro As; 114 Lys Lys Thr Gli 1155 Ser Ser Tyr As; 1170	Val Asp 111 r Ile Val 1125 p Glu Pro 10 u Glu Gly	1095 Asn 0 Glu Met Thr Val	Tyr Lys Asp Ser 1160 Val	Lys Ser Gly 1145 Lys Lys	Glu 1130 Ala Pro Glu	Ile 1115 Leu Ser Leu	Trp Gly Lys Leu 1180	Gln Val Glu His 1165	Asp Tyr Asn 1150 Glu Arg	Leu Lys 1135 Glu ) Ser Leu	Asp 1120 Gly His Thr
1090 Thr Ser Gln As; 1105 Gln Leu Arg Se: Gln Gly Pro As; 11 Lys Lys Thr Gl; 1155 Ser Ser Tyr As; 1170 Lys Leu Cys Va; 1185	Val Asp 111 r Ile Val 1125 p Glu Pro 10 11 Glu Gly n Tyr Arg	1095 Asn 0 Glu Met Thr Val 1175 Ser	Tyr Lys Asp Ser 1160 Val Ala	Lys Ser Gly 1145 Lys Lys Ser	Glu 1130 Ala Pro Glu Val	Ile 1115 Leu Ser Leu Ile Arg 1195	Trp Gly Lys Leu 1180 Lys	Gln Val Glu His 1165 Ile Ser	Asp Tyr Asn 1150 Glu Arg	Leu Lys 1139 Glu Ser Leu Lys	Asp 1120 Gly His Thr Ser Gln 1200
1090 Thr Ser Gln As; 1105 Gln Leu Arg Se: Gln Gly Pro As; 11 Lys Lys Thr Gl; 1155 Ser Ser Tyr As; 1170 Lys Leu Cys Va.	Val Asp 111 r Ile Val 1125 p Glu Pro 10 11 Glu Gly n Tyr Arg	1095 Asn 0 Glu Met Thr Val 1175 Ser	Tyr Lys Asp Ser 1160 Val Ala	Lys Ser Gly 1145 Lys Lys Ser	Glu 1130 Ala Pro Glu Val	Ile 1115 Leu Ser Leu Ile Arg 1195 His	Trp Gly Lys Leu 1180 Lys	Gln Val Glu His 1165 Ile Ser	Asp Tyr Asn 1150 Glu Arg	Leu Lys 1139 Glu Ser Leu Lys	Asp 1120 Gly His Thr Ser Gln 1200 Glu
1090 Thr Ser Gln As; 1105 Gln Leu Arg Se: Gln Gly Pro As; 11 Lys Lys Thr Gl; 1155 Ser Ser Tyr As; 1170 Lys Leu Cys Va; 1185	Val Asp 111 11e Val 1125 Glu Pro 10 1 Glu Gly 1 Tyr Arg 1 Gln Glu 119 1 Leu Arg 1205 2 Pro Tyr	1095 Asn 0 Glu Met Thr Val 1175 Ser 0 Asn	Tyr Lys Asp Ser 1160 Val Ala	Lys Ser Gly 1145 Lys Lys Ser Gly	Gln Glu 1130 Ala Pro Glu Val Ala 1210 Glu	Ile 1115 Leu Ser Leu Ile Arg 1195 His	1100 Lys Trp Gly Lys Leu 1180 Lys	Oln Val Glu His 1165 Ile Ser Val	Asp Tyr Asn 1150 Glu Arg Arg Val	Leu Lys Glu Ser Leu Lys Lys Glu Control Ser	Asp 1120 Gly 5 His Thr Ser Gln 1200 Glu
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1090 Thr Ser Gln Asj 1105 Gln Leu Arg Sei Gln Gly Pro Asj 112 Lys Lys Thr Gli 1155 Ser Ser Tyr Asi 1170 Lys Leu Cys Val 1185 Gln Gln Arg Lei Leu Leu Gln Ile 125 Ile Met Arg Lei	Val Asp 111 r Ile Val 1125 p Glu Pro 10 r Glu Gly r Tyr Arg l Gln Glu 119 r Leu Arg 1205 r Pro Tyr 20 r Ala His	1095 Asn 0 Glu Met Thr Val 1175 Ser 0 Asn Glu Glu	Tyr Lys Asp Ser 1160 Val Ala Met Lys Phe 1240 His	Lys Ser Gly 1145 Lys Lys Ser Gly Ala 1225 Leu	Gln Glu 1130 Ala Pro Glu Val Ala 1210 Glu Glu	Ile 1115 Leu Ser Leu Ile Arg 1195 His Asp	1100 Lys Trp Gly Lys Leu 1180 Lys Ala Thr	Gln Val Glu His 1165 Ile Ser Val Lys Cys 1245 Leu	Asp Tyr Asn 1150 Arg Arg Val Met 1230 Ala	Leu Lys Glu Ser Leu Lys Leu 1219 Gln Gly	Asp 1120 Gly His Thr Ser Gln 1200 Glu Glu Asn
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Thr Ser Gln Asilio5 Gln Leu Arg Sei Gln Gly Pro Asilio5 Ser Ser Tyr Asilio7 Lys Leu Cys Val 1185 Gln Gln Arg Lei Leu Leu Gln Il 1235 Gln Gln Asn Gli 1250 Pro Gly Ile Lei 1265 Phe Gln Leu Cys His Cys Ile Gli	Val Asp 111 r Ile Val 1125 r Glu Pro 10 r Glu Gly r Tyr Arg r Gln Glu 119 r Leu Arg 1205 r Pro Tyr r r r r r r r r r r r r r r r r r r	1095 Asn 0 Glu Met Thr Val 1175 Ser 0 Asn Glu Leu 1255 Val 0 Ile	Tyr Lys Asp Ser 1160 Val Ala Met Lys Phe 1240 His Thr	Lys Ser Gly 1145 Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn	Gln Glu 1130 Ala Pro Glu Val Ala 1210 Glu Gln His Gln Arg 1290 Val	Ile 1115 Leu Ser Leu Ile Arg 1195 His Asp Asn Ile His 1275 Val	Lys Gly Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val	Gln Val Glu His 1165 Ile Ser Val Lys Cys 1245 Leu Phe Gln	Asp Tyr Asn 1150 Glu Arg Arg Val Met 1230 Ala Dhe Met His	Leu Lys Glu Ser Leu Lys Leu 1215 Gln Gly Leu Asn Phe 1295 Phe	Asp 1120 Gly His Thr Ser Gln 1200 Glu Glu Asn Asn Asn 1280 Val
Thr Ser Gln Asilio5 Gln Leu Arg Sei Gln Gly Pro Asility Lys Thr Glivalis 1155 Ser Ser Tyr Asiliro Lys Leu Cys Valias Gln Gln Arg Lei Leu Leu Gln Il Ile Met Arg Lei 1235 Gln Gln Asn Glivalis The Gly Ile Lei 1265 Phe Gln Leu Cy	Val Asp 111 r Ile Val 1125 r Glu Pro 10 r Glu Gly r Tyr Arg r Gln Glu 119 r Leu Arg 1205 r Pro Tyr 20 r Ala His r Ala Leu r Glu Ala 127 r Ser Glu 1285 r Thr His	1095 Asn 0 Glu Met Thr Val 1175 Ser 0 Asn Glu Leu 1255 Val 0 Ile Gly	Tyr Lys Asp Ser 1160 Val Ala Met Lys Phe 1240 His Thr Asn Arg	Lys Ser Gly 1145 Lys Ser Gly Ala 1225 Leu Lys Met Glu Asn 1305 Lys	Gln Glu 1130 Ala Pro Glu Val Ala 1210 Gln His Gln Arg 1290 Val	Ile 1115 Leu Ser Leu Ile Arg 1195 His Asp Asn Ile His 1275 Val	Lys Gly Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile Val	Gln Val Glu His 1165 Ile Ser Val Lys Cys 1245 Leu Phe Gln Ile	Asp Tyr Asn 1150 Glu Arg Arg Val Met 1230 Ala Phe Met His Lys 1310 Cys	Leu Lys 1139 Glu Ser Leu Lys Leu 1219 Gln Gly Leu Asn Phe 1299 Phe	Asp 1120 Gly His Thr Ser Gln 1200 Glu Glu Asn Asn 1280 Val

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                                 1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
             1365
                              1370
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
                          1385
          1380
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
                      1400
                                       1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
                  1415
                                    1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
                       1435
               1430
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
            1445 1450
Asp Ile Cys Arq Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
                         1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
                      1480
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
                   1495
                                    1500
Arq Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
       1510
                       : 1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
            1525 1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
                          1545
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
                      1560
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                   1575
                                    1580
Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
                1590
                                1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
                             1610
            1605
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
                         1625
         1620
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
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Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
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Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
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                                           1710
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
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                      1720
      1715
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
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                                    1740
  1730
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly
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Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly
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Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
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          1780
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Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
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Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala 1860   1860   1870   1870   1870   1875   1880   1885   1880   1885   1880   1885   1880   1885   1880   1885   1880   1885   1880   1885   1880   1880   1880   1895   1900   1885   1900   1885   1900   1885   1900   1885   1900   1915   1920   1915   1920   1915   1920   1915   1920   1925   1920   1925   1925   1920   1925   1925   1920   1925   1925   1920   1925   1925   1925   1920   1925
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1875  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890  Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Ceu Glu Ala Ser Ala 1905  1900  Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Ceu Glu Ala Ser Ala 1905  1910  1925  Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1940  1940  1940  1945  Lys Asp Asp Leu Glu Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940  1950  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Leu Val Cys 1985  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1985  Leu Gly Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2015  Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2020  2025  Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2036  Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050  1e Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2050  Met Asp Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu Leu 2085  2075  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu Leu 2085  Ala Ile Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Arg 2015  Met Ala Leu Ile Leu Asn Asp Ile Asn Ala Ser Lys Leu Leu Leu 2085  2085  Ala Ile Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Arg 2015  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Glu Arg Ile Leu Leu 2115  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Lau Ala His 2140  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Lu Lys Asn Asn Ala Ser Lys Leu Leu Lys Asn Asn Ala Glu Arg Ile Leu Lys 2115  Ala Gln Ile Glu Ile Val Arg Leu Glu Leu Gln Thr Met Leu Lys Pro Gly 2130  Ala Gln Ile Glu Ile Val Arg Leu Glu Leu Gln Thr Met Leu Lys Pro Gly 2130  Ala Gln Ile Glu Ile Val Arg Leu Arg Leu Gln Thr Met Glu Ser Lys Leu Lys
Carrell   Carr
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1905   1910   1915   1920   1935   1935   1935   1935   1935   1935   1935   1935   1935   1935   1935   1935   1935   1935   1936   1945   1950   1945   1950   1945   1950   1945   1950   1945   1950   1945   1950   1945   1950   1945   1950   1955   1950   1945   1950   1950   1955   1955   1955
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925 1930 1935  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1945 1950  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1965  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970 1975 1985  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1985 1990 1995 2000  Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2005 2015  Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2020 2025 2030  Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035 2035  Asn Gln Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050 2065  Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050 2070 2075 2080  Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085 2090 2095  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu Leu 2100 2115  Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ag Gly 2130 2135 2125  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2135 2155 2160  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2155 2160  Gly Gln Leu Ala Arg His Asn Val Gly His Asn Ile Tyr Ile Leu La His 2145 2150 2155 2160  Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Arg Leu Glu Arg Thr Met Glu Gln Ile Val 2195 Pro Gly 2105  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu Leu 2105 2205 2205  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu Leu 2105 2205 2205
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1950 1965 1960 1965  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1965  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970 1975 1995 2000  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1985 1990 1995 2010 2015  Leu Gly Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly Ser Glu Asn Glu Lys Asn Val Ala Leu Ile 2020 2025 2015  Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2020 2025 2045  Glu Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035  Leu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050 2075 2075 2080  Met Asp Leu Val Leu Gly Leu Lys Asn Asn Ala Ser Lys Leu Leu Lu 2085 2090 2095  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2005  Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Ala Tyr 2115 2120  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2155 2160  Gly Gln Val Asp Gly Asp Glu Leu Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2155 2160  Gly Gln Val Asp Gly Asp Glu Ala Leu Gln Thr Met Leu Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Asp Glu Asp Arg Thr Met Glu Gln Ile Val 2195  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Glu Pro Ile 1955  Leu Arg Phe Leu Gln Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1985  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1985  Asn Phe Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2005  Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2010  Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2020  Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2030  Asn Gln Asn Cys Ile Asn Asp Ile Asn Pro Leu Gly Ile Asp Ile 2050  Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065  Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Ser Lys Leu Leu Leu 2085  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu Leu 2100  Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115  Ala Ala Ser Pro Arg Asn Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130  Ala Ala Ser Pro Arg Asn Val Glu His Asp Ile Tyr Ile Leu Ala His 2145  Ala Ala Ser Pro Arg Asn Val Glu Leu Glu Leu Glu Leu Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130  Ala Ala Ser Pro Arg Asn Val Glu Leu Glu Leu Glu Leu Glu Leu Glu Val Ile Lys Lys Arg 2155  Ala Ala Ser Pro Arg Asn Val Glu His Asn Ile Tyr Ile Leu Ala His 2145  2150  2165  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2150  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2160  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2200  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Glu Glu Ser Lys Leu 2210
Leu Arg Phe Leu   Leu   Leu   Cys   Glu   Asn   His   Asn   Arg   Asp   Leu   Gln   Leu   Leu   Cys   Glu   Asn   His   Asn   Arg   Asp   Leu   Gln   Leu   Leu   Leu   Cys   Glu   Asn   His   Asn   Arg   Asp   Leu   Gln   Leu   Leu
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys 1985  1985
1985
Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly 2005  Leu Gly Leu Eu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2020  Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035  Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050  Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050  Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050  Gle Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065  Gle Thr Ala Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Ser Lys Leu Leu Leu 2085  Glin Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2130  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2130  Ala Ala Gln Ile Glu Ile Val Asp Glu Ala Leu Gln Thr Met Leu Lys Pro Gly 2165  Gly Gln Val Asp Gly Asp Glu Ala Leu Gln Thr Met Leu Lys His Thr 2180  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn Ile Tyr Ile Leu Arg Ile Cys Ile Arg Ile Tyr Ile Leu Ser Lys Leu 2210
Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile 2020  Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035  2040  County  Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050  2055  2060  Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065  2070  Met Asp Leu Val Leu Glu Leu Lys Asn Ala Ser Lys Leu Leu Leu 2085  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100  Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2135  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145  Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys Pro Gly 2165  Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035 2040 2045  Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050 2055 2060  Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065 2070 2075 2080  Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085 2090 2095  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100 2105 2110  Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115 2135  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130 2135  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2150  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170  Gly Gln Val Asp Gly Asp Glu Ala Leu Gln Thr Met Leu Lys Pro Gly 2165 2170  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2205  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 2215  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Ile Asn  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Glu Gly Ser Lys Ile Asn
Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile 2050 2055 2060  Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065 2070 2075 2080  Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085 2090 2095  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu Leu 2100 2110  Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115 2115 2120 2125  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130 2135 2140  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2150 2155 2160  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170 2175  Gly Gln Val Asp Gly Asp Glu Ala Leu Gln Thr Met Leu Lys Pro Gly 2180 2180 2185 2190  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2205  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 2215 2220  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
The Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg 2065   2070   2075   2080
Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085 2090 2095  Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100 2110  Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115 2120 2125  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130 2135 2140  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2155 2160  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170 2175  Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 2185 2190  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2200  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 2215 2220  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr 2115
Met         Gln Gly Glu Val         Glu Phe Glu Asp Gly Glu Asp Gly Glu Asp Gly 2130         2135         2140           Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145         2150         2155         2160           Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165         2170         2175           Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180         2185         2190           Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195         2200         2205           Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210         2220           Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2150 2155 2160 2155 2160 2155 2160 2165 2170 2175 2170 2175 2175 2170 2175 2175 2170 2175 2175 2170 2175 2175 2170 2175 2175 2170 2175 2170 2175 2180 2185 2190 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2200 2205 2205 2210 2220 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170 2175  Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 2185 2190  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195 2200 2205  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 2215 2220  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
2165   2170   2175
Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2195  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
2195 2200 2205  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 2215 2220  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
2210 2215 2220 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln 2245 2250 2255
Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2260 2265 2270
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2275 2280 2285
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2290 2295 2300

Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2305 2310 2315 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2325 2330 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 2345 Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355 2360 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2380 2375 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2395 2390 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu 2410 2415 2405 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2425 2420 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu 2435 2440 2445 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp 2455 2460 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro 2470 2475 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys 2490 2495 2485 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu 2500 2505 2510 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu 2520 2525 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser 2535 2540 Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro 2550 2555 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Met Val 2565 2570 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe 2585 Ala Asp Leu Arg Ser Glu Lys Gln Lys Glu Glu Ile Leu Lys Thr 2600 2605 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2615 2620 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr 2630 2635 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2645 2650 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2665 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2680 . 2685 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2695 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp 2710 2715 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly 2730 2725 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala 2740 2745

<210> 3

<211> 2710

<212> PRT

### <213> Artificial Sequence

<220>

<400> 3 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val • 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro Asp Phe Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile 

Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu Ala Gly Glu Asp Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arq Cys Met Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly

915			920			925		
Glu Leu Met 930	Thr Gln	Val Val 935	Leu Arg	g Gly	Gly Gly 940	Phe Le	u Pro	Met
Thr Pro Met 945	Ala Ala	Ala Pro 950	Glu Gly	y Asn	Val Lys 955	Gln Al	a Glu	Pro 960
Glu Lys Glu	Asp Ile 965	Met Val	Met As	970	Lys Leu	Lys Il	e Ile 975	Glu
Ile Leu Gln	Phe Ile 980	Leu Asn	Val Arg		Asp Tyr	Arg Il 99		Cys
Leu Leu Cys 995			1000			1005		
Ser Glu Thr 1010		101	5		102	0		
Pro Gly Ala 1025		1030			1035			1040
Phe Gly Gly	104	5		1050	)		105	5
Gly Arg Thr	Phe Leu 1060	Arg Val	Leu Le		Leu Thr	Met Hi 10	_	Tyr
Pro Pro Leu 107		Gly Ala	Leu Gl	n Leu	Leu Phe	Arg Hi 1085	s Phe	Ser
Gln Arg Gln 1090		109	5		110	0		
Thr Ser Gln 1105	_	1110			1115			1120
Gln Leu Arg	112	5		1130	)		113	5
Gln Gly Pro	1140		11	45		11	50	
Lys Lys Thr 115	5	_	1160			1165		
Ser Ser Tyr 1170		117	5		118	0		
Lys Leu Cys 1185		1190			1195			1200
Gln Gln Arg	120	5		1210	)		121	5
Leu Leu Gln	1220	_	12	25	_	12	30	
Ile Met Arg 123	5		1240			1245	_	
Gln Gln Asn 1250		125	5		126	0		
Pro Gly Ile 1265		1270			1275			1280
Phe Gln Leu	Cys Ser 128		Asn Gl	u Arg 1290		Gln Hi	s Phe 129	
His Cys Ile	Glu Thr 1300	His Gly	Arg As		Gln Tyr	_	s Phe 10	Leu
Gln Thr Ile 131	_	Ala Glu	Gly Ly 1320	s Phe	Ile Lys	Lys Cy 1325	s Gln	Asp
Met Val Met 1330	Ala Glu	Leu Val		r Gly	Glu Asp 134		u Val	Phe
Tyr Asn Asp 1345	Arg Ala	Ser Phe 1350	Gln Th	r Leu	Ile Gln 1355	Met Me	t Arg	Ser 1360
Glu Arg Asp	Arg Met	Asp Glu	Asn Se	r Pro 1370	Leu Phe	Met Ty	r His	Ile
His Leu Val			Val Cy 13	s Thr				
Thr Glu Ile 139	Lys Cys	Asn Ser			Leu Asp			Arg

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Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
   1410
                    1415
                                     1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
                1430
                                 1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
                              1450
             1445
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
          1460
                           1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
      1475
             1480
                               1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
                   1495
                                    1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
       1510
                       1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
            1525 1530 1535
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
                 1545 1550
         1540
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
      1555 1560 1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                   1575 1580
Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
               1590 1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
            1605 1610 1615
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
         1620
                          1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
                       1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
                   1655
                                    1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                1670
                                 1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
                             1690
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
                          1705
Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
                       1720
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
                   1735
                                    1740
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
                1750
                                 1755
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
                              1770
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
                          1785
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
                       1800
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
                    1815
                                    1820
Lys Val Ala Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
                1830
                                 1835
Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
            1845
                              1850
Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
         1860
                          1865
                                           1870
Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
  1875 1880 1885
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
```

1890	1895	190	0
Gly Thr Gln Ala Thr			
1905	1910	1915	1920
Ala Val Ile Thr Ile 1929		1930	1935
Cys Glu Asn His Asn 1940	Arg Asp Leu G		
Asn Lys Thr Asn Tyr	Asn Leu Val C		Gln Phe Leu Asp
1955 Cys Ile Cys Gly Ser	1960 Thr Thr Glv G	lv Leu Glv Leu	1965 Leu Gly Leu Tyr
1970	1975	198	
Ile Asn Glu Lys Asn			
1985 Thr Glu Tyr Cys Gln	1990	1995 ie Glu Aen Gln	2000 Asn Cvs Tle Ala
200		2010	2015
Thr His Glu Ser Asn 2020		le Ile Thr Ala 025	Leu Ile Leu Asn 2030
Asp Ile Asn Pro Leu		rg Met Asp Leu	
2035	2040	on Alo Tlo Mot	2045
Lys Asn Asn Ala Ser 2050	Lys Leu Leu L	eu Ala lle Met 206	
Asp Ser Glu Asn Ala			
2065	2070	2075	2080
Leu Val Glu Val Ile 208	5	2090	2095
Glu Asp Gly Glu Asn 2100		ly Ala Ala Ser 105	Pro Arg Asn Val 2110
Gly His Asn Ile Tyr 2115	Ile Leu Ala H 2120	is Gln Leu Ala	Arg His Asn Lys 2125
Glu Leu Gln Thr Met 2130		ly Gly Gln Val 214	Asp Gly Asp Glu
Ala Leu Glu Phe Tyr			
2145	2150	2155	2160
Leu Asp Arg Thr Met 216		al Phe Pro Val 2170	Pro Ser Ile Cys 2175
Glu Phe Leu Thr Lys			
2180 Arg Asp Glu Gln Gly		185 an Nan Dha Dha	2190
2195	2200		2205
Asp Leu Phe Asn Glu 2210	Met Asn Trp G 2215	ln Lys Lys Leu 222	
Val Leu Tyr Trp Cys			Ser Ser Ile Ser
2225	2230	2235	Dha Dha Tura Daa
Phe Asn Leu Ala Val 224		eu Leu vai Ala 2250	2255
Phe Lys Gly Val Arg	Gly Gly Thr L	eu Glu Pro His	Trp Ser Gly Leu
2260		265	2270
Leu Trp Thr Ala Met 2275	Leu lle Ser L 2280	eu Ala lle Val	11e Ala Leu Pro 2285
Lys Pro His Gly Ile 2290	Arg Ala Leu I 2295	le Ala Ser Thr 230	
Ile Phe Ser Val Gly	Leu Gln Pro T		<del>-</del>
2305	2310	2315	2320
Asn Val Cys Asn Lys 232		eu Met Ser Phe 2330	val Gly Asn Cys 2335
Gly Thr Phe Thr Arg	Gly Tyr Arg A	la Met Val Leu	
Leu Tyr His Leu Leu		345 le Cys Ala Met	
2355	2360	en Dho New Ion	2365
His Glu Phe Phe Tyr 2370	2375	eu Pne Asp Leu 238	<del>-</del> -

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Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
                   2390
                                      2395
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
               2405
                                  2410
Ile Val Gly Tyr Leu Phe Phe Lys Asp Phe Ile Leu Glu Val Asp
           2420
                               2425
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
       2435
                           2440
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
                       2455
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
                   2470
                                       2475
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
               2485
                                   2490
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Val Gly Asp Val
           2500
                               2505
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
                           2520
       2515
                                              2525
Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
                       2535
                                          2540
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
                   2550
                                      2555
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
                                  2570
               2565
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
           2580
                               2585
                                                  2590
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                           2600
                                              2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
                       2615
                                          2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
                                      2635
                   2630
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
                                  2650
               2645
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
                              2665
           2660
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
                          2680
                                              2685
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
                                          2700
                       2695
Asn Pro Gln Gln Pro Ala
                   2710
<210> 4
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## <220>

<223> Description of Artificial Sequence:/note = synthetic construct

#### <400> 4

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10

Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25

Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40

<sup>&</sup>lt;211> 2749

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Artificial Sequence

Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro Asp Phe Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Leu Gly Asp Gln

	530					535					540				
Arg 545	His	Ala	Pro	Phe	Arg 550	His	Ile	Cys	Arg	Leu 555	Cys	Tyr	Arg	Val	Leu 560
Arg	His	Ser	Gln	Gln 565	Asp	Tyr	Arg	Lys	Asn 570	Gln	Glu	Tyr	Ile	Ala 575	Lys
Gln	Phe	Gly	Phe 580	Met	Gln	Lys	Gln	Ile 585	Gly	Tyr	Asp	Val	Leu 590	Ala	Glu
Asp	Thr	Ile 595	Thr	Ala	Leu	Leu	His 600	Asn	Asn	Arg	Lys	Leu 605	Leu	Glu	Lys
His	Ile 610	Thr	Ala	Ala	Glu	Ile 615	Asp	Thr	Phe	Val	Ser 620	Leu	Val	Arg	Lys
Asn 625	Arg	Glu	Pro	Arg	Phe 630	Leu	Asp	Tyr	Leu	Ser 635	Asp	Leu	Cys	Val	Ser 640
Met	Asn	Lys	Ser	Ile 645	Pro	Val	Thr	Gln	Glu 650	Leu	Ile	Cys	Lys	Ala 655	Val
			660			_		665				Lys	670		
		675					680					Asn 685			
	690					695		_			700	Arg			
705					710					715		Gln			720
			_	725					730			Tyr		735	
			740		_		_	745	_			Tyr	750		
		755		_			760				•	Leu 765			
	770					775					780	Phe			
785					790		_			795		Gln			800
				805					810			Glu		815	
	_	_	820			_		825	_	_		Ile	830		
		835					840			_		Arg 845	_		
	850	_				855					860	Lys			
865					870					875		Gly			880
		-		885				-	890			Ala		895	_
			900					905				Met	910		
		915	_	_			920					His 925	_		
	930					935					940	Phe			
Thr 945	Pro	Met	Ala	Ala	Ala 950	Pro	Glu	Gly	Asn	Val 955	Lys	Gln	Ala	Glu	Pro 960
Glu	Lys	Glu	Asp	Ile 965	Met	Val	Met	Asp	Thr 970	Lys	Leu	Lys	Ile	Ile 975	Glu
Ile	Leu	Gln	Phe 980	Ile	Leu	Asn	Val	Arg 985	Leu	Asp	Tyr	Arg	Ile 990	Ser	Cys
		995					1000	)				Asn 1005	5		
Ser	Glu 1010		Ser	Ser	Gly	Asn 101		Ser	Gln	Glu	Gly 102	Pro	Ser	Asn	Val

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Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
               1030
                                 1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
                             1050
             1045
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
                         1065
         1060
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                       1080 1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
                   1095
                                    1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
                1110
                                 1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
            1125
                             1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
                         1145
         1140
                                           1150
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                       1160 1165
      1155
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
                   1175
                                    1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
                                1195
       1190
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
            1205 1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
         1220 1225 1230
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
      1235
            1240 1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
         1255
                                    1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
     1270 1275 1280
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
            1285 1290 · 1295
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
         1300
                         1305
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
     1315 1320 1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
                   1335
                                    1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
               1350
                                1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
            1365
                             1370
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
                         1385
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
                      1400
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
                  1415
                                    1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
                1430
                                1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
                             1450
            1445
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
         1460
                         1465
                                          1470
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
      1475
                      1480
                                       1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
   1490 1495 1500
Arg Gln Pro Val Phe Val Gln Leu Gln Gly Val Phe Arg Val Tyr
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His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys 1525  11e Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro 1540  Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn 1550  Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570  11e Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570  11e Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570  11e Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala 1570  11e Val Gln Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile 1585  11590  11e Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg 1610  Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg 1625  Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635  1635  Glu Gly Phe 1le Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1655  Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg 1660  Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile 1685  Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1700  Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1715  His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1730  Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly 1745  Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly 1765  Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala 1780  Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly 1765  Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala 1780  Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1825  1820  Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1825  1830  1845  Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825  1845  1850  1865  1860  Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1870  1870  Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1865  1860  Thr Val Thr Val Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala 1860  1865  1860  Thr	1505	1510		1515	1520
1540   1545   1550   1561   1561   1562   1565   1565   1565   1565   1565   1565   1565   1565   1565   1565   1560   1575   1580   1575   1580   1580   1595   1690   1595   1690   1595   1690   1695   1695   1690   1695		Leu Met Pro		Ala Ser Val	Glu Ser Cys
1555	_	_		Arg Ala Ile	
1570   1575   1580   1581   1581   1585   1590   1595   1600   1595   1600   1595   1600   1615	<del>-</del>	Ser Gln Val		_	
1585	_	•			Arg Asn Ala
1605		_	Ala Ala Ser		
1620	_	1605	161	0	1615
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu 1635				Val Asp Val	
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu 1650	Pro Glu Leu Leu		Asn Thr Asp		Lys Cys Glu
1665			-		Gln Leu Leu
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn 1700 1705 1710  Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp 1715 1720 1725  His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1730 1735 1740  Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly 1745 1750 1755 1760  Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly 1765 1770 1775  Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Glu Ser Leu Thr Ser Phe Gly 1785 1780 1785 1770 1775  Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Glu Ser Asn Leu Val Ala 1780 1785 1790  Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1810 1815 1825 1830 1835 1835 1835 1835 1836  Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845 1860 1865 1870  Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1875 1880 1885  Glu Val Asp Arg Asp Ala Pro Ser Arg Leu Gly Asn Lys Lys Lys Asp Asp 1875 1880 1885  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Lys Asp Asp 1875 1880 1885  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Lys Asp Asp 1875 1880 1885  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Lys Asp Asp 1875 1880 1885  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Lys Asp Asp 1875 1880 1895  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890 1995  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1905  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Asn Tyr Asn Leu Glu Cys Glu Asn His Asn Tyr Asn Leu Glu Cys Glu Asn His Asn Arg Asp Leu Gln 1970  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys			Cys Ile Lys		
1700	Glu Met Met Thr	-			
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr 1730  Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly 1745  Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly 1765  Gly Ala Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1795  Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1810  Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825  Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Ile Lys Ala 1860  Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Bro Ile 1875  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ser Glu Lys Phe Phe 1875  Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1810  Leu Leu Ala Ile Ala Leu Clu Gly Gly Asn Thr Thr Ile Gln His 1825  1830  1835  Thr Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Glu Ile Lys Ala 1850  Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1875  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ash Lys Lys Asp Asp 1875  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890  Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1905  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Asp 1925  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1925  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1935  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955  Leu Arg Phe Leu Clu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys Cys Gln Asn Pro Asp 1975	-			Pro Pro Glu	
1730		Leu Glu Pro		_	_
1745					Arg Tyr Tyr
1765	1745	1750		1755	1760
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile 1795 1800 1805  Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1810 1820  Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825 1830 1835 1840  Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845 1850 1855  Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala 1860 1865 1860  Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1870  Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1875 1880 1885  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890 1895 1990  Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1905 1991 1995  Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925 1930 1935  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1950  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1965  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970 1975 1980  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys		1765	177	0	1775
Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile 1810 1815 1820  Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825 1830 1835 1840  Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe 1845 1850 1855  Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala 1860 1865 1870  Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1875 1880 1885  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890 1895 1900  Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Glu Ala Ser Ala 1905 1910 1915 1920  Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925 1930 1935  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1950  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1975 1980  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys	178	0	1785		1790
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His 1825	1795		1800	1809	5
1825	1810	1815	5	1820	
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala 1860	1825	1830		1835	1840
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp 1875  Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr 1890  Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala 1905  Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp 1925  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys		1845	185	0	1855
1875	=		-	GIn GIn GIu	
1890		Asn Thr Ser			
1905					Glu Pro Thr
1925 1930 1935  Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala 1940 1945 1950  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1965  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970 1975 1980  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys			Arg Asp Gln		
1940 1945 1950  Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile 1955 1960 1965  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970 1975 1980  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys	Ala Thr Arg Lys			-	
1955 1960 1965  Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln 1970 1975 1980  Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys				Ala Thr Thr	
1970 1975 1980 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys		Glu Met Ser			
	_		_		Asp Leu Gln
		_	Asn Lys Thr		

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Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
                              2010
Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
          2020
                           2025
Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
                       2040
Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
                    2055
                                     2060
Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
                2070
                                 2075
Met Asp Leu Val Leu Glu Leu Lys Asn Ala Ser Lys Leu Leu Leu
                              2090
             2085
Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
                           2105
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr
                       2120
Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asp Gly Glu Asp Gly
                    2135
                                     2140
Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His
                2150 . 2155
Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly
             2165
                              2170
Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr
                          2185
          2180
                                            2190
Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val
                       2200
      2195
                                        2205
Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu
                    2215
                                     2220
Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
                2230
                                 2235
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln
                             2250 2255
             2245
                    .
Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met
         2260
                          2265
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu
      2275
                       2280
                                        2285
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu
                                     2300
                   2295
Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu
                                 2315
                2310
Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile
             2325
                              2330
Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr
          2340
                          2345
Leu Phe Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu
                       2360
                                       2365
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
                    2375
                                     2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
                2390
                                 2395
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu
                              2410 2415
             2405
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
          2420
                           2425
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
                       2440
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
                                     2460
                    2455
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
                2470 2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
```

2490 2485 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu 2500 2505 2510 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu 2520 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser 2535 2540 Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro 2550 2555 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Met Val 2570 2565 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe 2580 2585 2590 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr 2600 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr 2615 2620 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr 2635 2630 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2650 / 2655 2645 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2660 2665 2670 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2685 2680 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2695 2700 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp 2710 2715 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly 2730 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala

<210> 5

<211> 2710

<212> PRT

<213> Artificial Sequence

115

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 5

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 75 70 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 85 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 100 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser

120

Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Asp Val Val Arg Leu Phe His Ala Glu Glu Lys Phe Leu Thr Cys Asp Glu His Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro Asp Phe Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys

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615
                                          620
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                   630
                                      635
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
               645
                                  650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
                               665 .
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                           680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                       695
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                   710
                                      715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
               725
                                  730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
           740
                              745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                           760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                       775
                                          780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                                      795
                   790
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
                                  810
              805
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
 820
                              825
                                                  830
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                          840
                                             845
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                     855
                                          860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
                         · 875
            . 870
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
              885
                                  890
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
           900
                              905
                                                  910
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                          920
                                              925
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                       935
                                          940
Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                   950
                                      955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                  970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
                              985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
                          1000
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
                       1015
                                          1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                  1030
                                     1035<sup>-</sup>
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
                                 1050
               1045
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
           1060
                    1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                          1080 1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
   1090
                       1095
                                          1100
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Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
                 1110
                                  1115
1105
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
             1125
                               1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
                           1145
          1140
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                        1160
      1155
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
                   1175
                                     1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
                                 1195
       1190
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
       1205
                              1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
         1220
                 1225
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
              1240 1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
            1255
                            1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
                1270
                         1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
             1285
                              1290
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
                          1305
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
                       1320
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
                   1335
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
                        1355
                1350
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
             1365
                              1370
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
          1380
                          1385
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
      1395 1400
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
                   1415
                                     1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
                1430
                                  1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
             1445
                              1450
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
          1460
                          1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
      1475
                       1480
                                         1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
   1490 1495
                                      1500
Arg Gln Pro Val Phe Val Gln Leu Gln Gly Val Phe Arg Val Tyr
1505 1510 1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
             1525
                     1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
                           1545
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
                       1560
      1555
                                         1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
   1570 1575
                                     1580
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
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1585	1590	1595	1600
Ile Glu Arg Leu Gln 160	Asp Ile Val		
Pro Leu Val Gln Ala 1620	Glu Leu Ser	Val Leu Val Asp 1625	Val Leu His Arg 1630
Pro Glu Leu Leu Phe 1635	Pro Glu Asn 1640		Arg Lys Cys Glu 1645
Ser Gly Gly Phe Ile 1650	Cys Lys Leu 1655	Ile Lys His Thr	
Glu Glu Asn Glu Glu 1665	Lys Leu Cys 1670	Ile Lys Val Leu 1675	Gln Thr Leu Arg 1680
Glu Met Met Thr Lys 168		Tyr Gly Glu Lys 1690	Gly Glu Ala Leu 1695
Arg Gln Ile Leu Val 1700	Asn Arg Tyr	Tyr Gly Asn Ile 1705	Arg Pro Ser Gly 1710
Arg Arg Glu Glu Leu 1715	Thr Ser Phe 1720		Leu Ser Pro Gly 1725
Gly Pro Ser Lys Pro 1730	Gly Gly Gly 1735	Gly Gly Gly Pro 1740	
Thr Ser Arg Gly Glu 1745	1750	1755	1760
Lys Glu Gly Ala Ser 176	5	1770	1775
Ser Asp Arg Val Phe 1780		1785	1790
Glu Gly Gly Asn Thr 1795	1800		1805
Glu Asp Lys Lys Ser 1810	1815	1820	)
Lys Val Ala Gln Gln 1825	1830	1835	1840
Asp Leu Gly Asn Lys	5	1850	1855
Ser Arg Lys Lys Ala 1860	Ā	1865	1870
Arg Asp Gln Leu Leu 1875	1880	)	1885
Thr Phe Arg Arg Glu 1890	1895	190	ס
Gly Thr Gln Ala Thr	1910	1915	1920
Ala Val Ile Thr Ile	5	1930	1935
Cys Glu Asn His Asn 1940		1945	1950
Asn Lys Thr Asn Tyr 1955	1960	)	1965
Cys Ile Cys Gly Ser 1970	1975	198	0
Ile Asn Glu Lys Asn 1985	1990	1995	2000
Thr Glu Tyr Cys Gln	5	2010	2015
Thr His Glu Ser Asn 2020		2025	2030
Asp Ile Asn Pro Leu 2035	2040	)	2045
Lys Asn Asn Ala Ser 2050	2055	206	0
Asp Ser Glu Asn Ala 2065	Glu Arg Ile 2070	Leu Tyr Asn Met 2075	Arg Pro Lys Glu 2080

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Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
            2085
                            2090
Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
                         2105
Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
                      2120
Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
                  2135
                                   2140
Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
2145 2150
                     2155
Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
            2165
                            2170
Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
         2180
                         2185
Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
                      2200
Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
                   2215
                                  2220
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
               2230 2235
Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro
                            2250 2255
       2245
Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu
         2260
               2265
                                        2270
Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
     2275 2280 2285
Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
                  2295 2300
Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
               2310 . 2315
Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
           2325
                           2330
Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
         2340 2345
                                        2350
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
     2355 2360 2365
His Glu Phe Phe Tyr Ser Leu Leu Phe Asp Leu Val Tyr Arg Glu
   2370 2375
                                 2380
Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
       2390
                               2395
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
            2405 2410
Ile Val Gly Tyr Leu Phe Phe Lys Asp Phe Ile Leu Glu Val Asp
        2420 2425
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
                     2440
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
                  2455
                                  2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
               2470
                               2475
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
                            2490
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
                        2505
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
     2515 2520
                                     2525
Tyr Asp Leu Leu Phe Phe Met Val Ile Ile Val Leu Asn Leu
                  2535
                                  2540
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
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2565
                                    2570
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
            2580
                                2585
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                            2600
                                                2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
                        2615
                                            2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
                    2630
                                        2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
                2645
                                    2650
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
            2660
                                2665
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
                            2680
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
                        2695
                                            2700
Asn Pro Gln Gln Pro Ala
                    2710
<210> 6
<211> 2749
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<220>
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Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
                                25
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
                            40
                                                45
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
                        55
                                            60
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
                    70
                                        75
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
                85
                                    90
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
                                105
            100
                                                    110
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
                            120
                                                125
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                        135
                                            140
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
                    150
                                        155
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
                165
                                    170
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
            180
                                185
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
                            200
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                       215
                                            220
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
```

235

Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln

				725					730					735	
Leu	Asn	Leu	Phe 740		Arg	Met	Cys	Leu 745		Arg	Gln	Tyr	Leu 750	Ala	Ile
Asn	Glu	Ile 755	Ser	Gly	Gln	Leu	Asp 760	Val	Asp	Leu	Ile	Leu 765	Arg	Cys	Met
Ser	Asp 770	Glu	Asn	Leu	Pro	Tyr 775	Asp	Leu	Arg	Ala	Ser 780	Phe	Cys	Arg	Leu
785			Met		790	_	_	_		795					800
	-	-	Ala	805		_			810					815	
			Asp 820					825					830		
		835	Thr				840			_		845			
_	850	_	Phe			855					860				
865			Asn		870					875					880
			Leu	885					890					895	
_			Val 900					905					910		
		915	Lys				920					925			
	930		Thr			935					940				
945			Ala		950					955					960
	_		Asp	965					970					975	
			Phe 980					985					990		
		995	Ile		_	_	1000	)	_			1009	5		
	1010	)	Ser			1019	5				102	0			
1025	5		Leu		1030	)				103	5				1040
			Ser	104	5				105	Э				105	5
			Phe 1060	)				106	5				107	)	
Pro	Pro	Leu 107!		Ser	Gly	Ala	Leu 108		Leu	Leu	Phe	Arg 108		Phe	Ser
Gln	Arg 109		Glu	Val	Leu	Gln 109		Phe	Lys	Gln	Val 110		Leu	Leu	Val
Thr 1109		Gln	Asp	Val	Asp 111		Tyr	Lys	Gln	Ile 111		Gln	Asp	Leu	Asp 1120
Gln	Leu	Arg	Ser	Ile 112		Glu	Lys	Ser	Glu 113		Trp	Val	Tyr	Lys 113	Gly 5
Gln	Gly	Pro	Asp 114		Pro	Met	Asp	Gly 114		Ser	Gly	Glu	Asn 115		His
Lys	Lys	Thr 115		Glu	Gly	Thr	Ser 116		Pro	Leu	Lys	His 116		Ser	Thr
Ser	Ser 117		Asn	Tyr	Arg	Val 117		Lys	Glu	Ile	Leu 118		Arg	Leu	Ser.
Lys 118		Cys	Val	Gln	Glu 119		Ala	Ser	Val	Arg 119		Ser	Arg	Lys	Gln 1200
Gln	Gln	Arg	Leu	Leu 120	_	Asn	Met	Gly	Ala 121		Ala	Val	Val	Leu 121	Glu 5

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Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
                            1225
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
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                                          1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
                     1255
                                       1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
                 1270
                                   1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
              1285
                                1290
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
                            1305
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
                         1320
                                          1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
                     1335
                                       1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
                                  1355
                 1350
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
             1365
                      1370
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
                                              1390
          1380
                  1385
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
                        1400
                                1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
                    1415
                                      1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
                        1435
       1430
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
        1445 1450 1455
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
          1460 1465 1470
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
                       1480
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Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
                    1495
                                      1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
                1510
                                  1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
             1525
                               1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
                           1545
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
                        1560
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                    1575
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
                 1590
                                   1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
              1605
                                1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
          1620
                            1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
                        1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
                    1655
                                       1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                 1670
                                   1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
             1685
                               1690
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
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17	00	1705	1710
Ser Thr Glu Gl	u Leu Glu Pro	Ser Pro Pro Leu 1720	a Arg Gln Leu Glu Asp 1725
His Lys Arg Gly	y Glu Ala Leu 173	Arg Gln Ile Let	ı Val Asn Arg Tyr Tyr 1740
Gly Asn Ile Ar	g Pro Ser Gly 1750	Arg Arg Glu Glu 175	Leu Thr Ser Phe Gly
Asn Gly Pro Le	u Ser Pro Gly 1765	Gly Pro Ser Lys	s Pro Gly Gly Gly Gly 1775
Gly Gly Pro Gl		Thr Ser Arg Gly 1785	Glu Met Ser Leu Ala 1790
1795		1800	a Ser Asn Leu Val Ile 1805
Asp Leu Ile Me 1810	t Asn Ala Ser 181		Phe His Glu Ser Ile 1820
Leu Leu Ala Il 1825	e Ala Leu Leu 1830	Glu Gly Gly Asr 183	Thr Thr Ile Gln His 1840
Ser Phe Phe Cy	s Arg Leu Thr 1845	Glu Asp Lys Lys 1850	s Ser Glu Lys Phe Phe 1855
18	60	1865	n Gln Glu Ile Lys Ala 1870
1875		1880	n Lys Lys Asp Asp 1885
1890	189	5	s Ala Lys Glu Pro Thr 1900
1905	1910	191	
	1925	1930	g Glu Ala Asp Pro Asp 1935
19	40	1945	Thr Thr Asp Lys Ala
1955		1960	Ile Met Gln Pro Ile 1965
1970	197	5	S Asn Arg Asp Leu Gln 1980
1985	1990	199	·
	2005	2010	y Ser Thr Thr Gly Gly 2015
20	20	2025	2030
2035		2040	s Gln Gly Pro Cys His 2045
2050	205	5	Asn Gly Ile Asp Ile 2060
2065	2070	207	
_	2085	2090	a Ser Lys Leu Leu Leu 2095
21	00	2105	n Ala Glu Arg Ile Leu 2110
2115		2120	l Ile Lys Lys Ala Tyr 2125
2130	213	5	1 Asn Gly Glu Asp Gly 2140
2145	2150	219	
	2165 .	2170	r Met Leu Lys Pro Gly 2175
Gly Gln Val As 21		Ala Leu Glu Pho 2185	e Tyr Ala Lys His Thr 2190

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Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val
                        2200
Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu
                                     2220
                    2215
Arg Ile Tyr Tyr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
                 2230
                                  2235
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln
             2245
                               2250
Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met
          2260
                           2265
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu
                        2280
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu
           2295
                                      2300
Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu
                                 2315
                 2310
Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile
                              2330
             2325
Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr
          2340
                           2345
                                            2350
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu
                       2360
      2355
                                        2365
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
           2375
                           2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
                 2390
                                 2395
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu
             2405
                              2410 2415
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
                           2425 2430
          2420
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
      2435 2440 2445
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
           2455 2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
                2470
                                  2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
             2485
                             2490
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
          2500
                          2505
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
                       2520
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
                    2535
                                     2540
Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
                2550
                                 2555
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Phe Phe Phe Met Val
             2565
                              2570
Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
          2580
                           2585
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
                       2600
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
                    2615
                                     2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
                2630
                                 2635
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
             2645
                              2650
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
          2660 2665
                                            2670
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
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2675 2680 2685

Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
2690 2695 2700

Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
2705 2710 2715 2720

Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
2725 2730 2735

His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
2740 2745

<210> 7 <211> 2710 <212> PRT <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 7 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 205 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 230 235 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 245 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 260 265 270 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln 280 285 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg 295 300 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro 310 315

Asp Phe Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp 325 330 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val 345 340 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe 360 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg 375 380 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His 390 395 Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu 410 Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile 425 Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp 440 Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr 455 460 Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu 470 475 Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu 485 490 Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu 510 505 Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr 520 525 Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln 535 540 Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu 555 550 Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys 570 . 565 Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu 580 . 585 Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys 600 . 605 His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys ; 615 620 Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser 630 635 Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val 650 Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu 665 Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu 680 Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn 700 695 Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys 710 715 Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln 730 Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile 745 Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met 760 Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu 775 780 Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro 790 795 Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile

	809					810					815	
Asp Asp Tyr			Gly	Ala	Ser 825		Asp	Glu	Ile	Lys 830		Arg
Phe Ala Gln 835	-	Glu	Phe	Val 840		Glu	Tyr	Leu	Arg 845	Asp	Val	Val
Cys Gln Arg 850	Phe Pro	) Phe	Ser 855	Asp	Lys	Glu	Lys	Asn 860	Lys	Leu	Thr	Phe
Glu Val Val 865	Asn Let	1 Ala 870	Arg	Asn	Leu	Ile	Tyr 875	Phe	Gly	Phe	Tyr	Asn 880
Phe Ser Asp	885	5				890					895	
Cys Val His	900				905			_		910		
Glu Glu Asn 915				920					925			
Glu Leu Met 930			935					940				
Thr Pro Met 945		950					955					960
Glu Lys Glu	96!	5			_	970	-		-		975	
Ile Leu Gln	980				985					990		
Leu Leu Cys 995		_		1000	)				1005	;		
Ser Glu Thr 1010		_	1015	5				1020	)			
Pro Gly Ala 1025	Leu As <sub>l</sub>	Phe 1030		His	Ile	Glu	Glu 1035		Ala	Glu	Gly	Ile 1040
Phe Gly Gly	Ser Gla		Àsn	Thr	Pro	Leu 1050		Leu	Asp	Asp	His 1055	
Gly Arg Thr	Phe Let	ı Arg	Val	Leu	Leu 1065		Leu	Thr	Met	His 1070		Tyr
	1000				1007	,				1070	,	
Pro Pro Leu 1075	Val Se	Gly	Ala	Leu 1080	Gln		Leu	Phe	Arg 1085	His		Ser
1075 Gln Arg Gln 1090	Val Se: Glu Val	l Leu	Gln 1095	1080 Ala	Gln ) Phe	Leu Lys	Gln	Val 1100	1085 Gln	His Leu	Phe Leu	Val
1075 Gln Arg Gln	Val Se: Glu Val	l Leu	Gln 1095 Asn	1080 Ala	Gln ) Phe	Leu Lys	Gln	Val 1100 Lys	1085 Gln	His Leu	Phe Leu	Val
1075 Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg	Val Ser Glu Val Asp Val Ser Ile	Leu Lasp 1110 Val	Gln 1095 Asn ) Glu	1080 Ala Tyr Lys	Gln Phe Lys Ser	Leu Lys Gln Glu 1130	Gln Ile 1119 Leu	Val 1100 Lys Trp	1085 Gln ) Gln Val	His Leu Asp	Phe Leu Leu Lys 1135	Val Asp 1120 Gly
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro	Val Sei Glu Vai Asp Vai Ser Ile 112 Asp Gli 1140	L Leu L Asp 1110 e Val 25 1 Pro	Gln 1095 Asn ) Glu Met	1080 Ala Tyr Lys Asp	Gln Phe Lys Ser Gly 1145	Leu Lys Gln Glu 1130 Ala	Gln Ile 1115 Leu Ser	Val 1100 Lys Trp Gly	1085 Gln Gln Val Glu	His Leu Asp Tyr Asn 1150	Phe Leu Leu Lys 1135 Glu	Val Asp 1120 Gly His
1075 Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg	Val Sei Glu Val Asp Val Ser Ile 11: Asp Glu 1140 Glu Glu	L Leu L Asp 1110 e Val 25 1 Pro	Gln 1095 Asn ) Glu Met	1080 Ala Tyr Lys Asp	Gln Phe Lys Ser Gly 1145 Lys	Leu Lys Gln Glu 1130 Ala	Gln Ile 1115 Leu Ser	Val 1100 Lys Trp Gly	1085 Gln Gln Val Glu	His Leu Asp Tyr Asn 1150	Phe Leu Leu Lys 1135 Glu	Val Asp 1120 Gly His
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro Lys Lys Thr	Val Sei Glu Vai Asp Vai Ser Ile 11: Asp Glu 1140 Glu Glu	L Leu L Asp 1110 E Val 25 1 Pro	Gln 1095 Asn ) Glu Met	Tyr Lys Asp Ser 1160 Val	Gln Phe Lys Ser Gly 1145 Lys	Leu Lys Gln Glu 1130 Ala Pro	Gln Ile 1115 Leu ) Ser Leu	Val 1100 Lys Trp Gly	1085 Gln Gln Val Glu His 1165 Ile	His Leu Asp Tyr Asn 1150 Glu	Phe Leu Leu Lys 1135 Glu Ser	Val Asp 1120 Gly His
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro Lys Lys Thr 1155 Ser Ser Tyr	Val Sei Glu Val Asp Val Ser Ile 11: Asp Glu 1140 Glu Glu Asn Ty:	L Leu L Asp 1110 E Val 25 1 Pro 1 Gly C Arg	Gln 1095 Asn ) Glu Met Thr Val 1175 Ser	Tyr Lys Asp Ser 1160 Val	Gln Phe Lys Ser Gly 1145 Lys Lys	Leu Lys Gln Glu 1130 Ala Pro	Gln Ile 1119 Leu Ser Leu	Val 1100 Lys Trp Gly Lys Leu 1180 Lys	1085 Gln Gln Val Glu His 1165 Ile	His Leu Asp Tyr Asn 1150 Glu Arg	Leu Lys 1135 Glu Ser Leu	Val Asp 1120 Gly His Thr
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro Lys Lys Thr 1155 Ser Ser Tyr 1170 Lys Leu Cys	Val Sei Glu Val Asp Val Ser Ila 11: Asp Glu 1140 Glu Glu Glu Glu Val Gli	L Leu L Asp 1110 E Val 25 L Pro L Gly C Arg L Glu 1190 L Arg	Gln 1095 Asn ) Glu Met Thr Val 1175 Ser	1080 Ala Tyr Lys Asp Ser 1160 Val	Gln Phe Lys Ser Gly 1145 Lys Lys Ser	Leu Lys Gln Glu 1130 Ala Pro Glu Val	Gln Ile 1115 Leu Ser Leu Ile Arg 1199 His	Val 1100 Lys Trp Gly Lys Leu 1180 Lys	Gln  Gln  Val  Glu  His  1169  Ile  Ser	His Leu Asp Tyr Asn 1150 Glu Arg	Phe Leu Lys 1135 Glu Ser Leu Lys	Val Asp 1120 Gly His Thr Ser Gln 1200 Glu
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro Lys Lys Thr 1155 Ser Ser Tyr 1170 Lys Leu Cys 1185	Val Sei Glu Vai Asp Vai Ser Ila 112 Asp Glu 1140 Glu Glu S Asn Ty: Val Gli Leu Lei	L Leu L Asp 1110 E Val 25 L Pro L Gly C Arg L 1190 L Arg L Arg	Gln 1095 Asn ) Glu Met Thr Val 1175 Ser ) Asn	1080 Ala Tyr Lys Asp Ser 1160 Val Ala	Gln Phe Lys Ser Gly 1145 Lys Lys Ser Gly	Leu Lys Gln Glu 1130 Ala Pro Glu Val Ala 1210 Glu	Gln Ile 1115 Leu Ser Leu Ile Arg 1195 His	Val 1100 Lys Trp Gly Lys Leu 1180 Lys	1085 Gln Gln Val Glu His 1165 Ile Ser	His Leu Asp Tyr Asn 1150 Glu Arg Arg	Phe Leu Lys 1135 Glu Ser Leu Lys Leu 1215 Gln	Val Asp 1120 Gly His Thr Ser Gln 1200 Glu
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro Lys Lys Thr 1155 Ser Ser Tyr 1170 Lys Leu Cys 1185 Gln Gln Arg	Val Sei Glu Vai Asp Vai Ser Ile 1140 Glu Glu Glu Glu Asn Tyi Val Gli Leu Leu 1220 Leu Al	Leu LAsp 1110 Val Pro Gly Arg 1190 LArg Tyr	Gln 1095 Asn ) Glu Met Thr Val 1175 Ser ) Asn	1080 Ala Tyr Lys Asp Ser 1160 Val Ala Met Lys	Gln Phe Lys Ser Gly 1145 Lys Lys Ser Gly Ala 1225 Leu	Leu Lys Gln Glu 1130 Ala Pro Glu Val Ala 1210 Glu 6	Ile 1115 Leu Ser Leu Ile Arg 1199 His	Val 1100 Lys Trp Gly Lys Leu 1180 Lys Ala	1085 Gln Gln Val Glu His 1165 Ile Ser Val	His Leu Asp Tyr Asn 1150 Glu Arg Arg Val Met 1230 Ala	Leu Lys 1135 Glu Ser Leu Lys Leu 1215 Gln	Asp 1120 Gly His Thr Ser Gln 1200 Glu Glu
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro Lys Lys Thr 1155 Ser Ser Tyr 1170 Lys Leu Cys 1185 Gln Gln Arg Leu Leu Gln Ile Met Arg	Val Ser Glu Var Asp Var Ser Ile 1140 Glu Glu Asn Tyr Val Glr Leu Lee 127 Ile Pro 1220 Leu Al	Leu LAsp 1110 Val S Pro Gly Arg LArg LArg The Arg LArg The Arg	Gln 1095 Asn Glu Met Thr Val 1175 Ser Asn Glu Glu	1080 Ala Tyr Lys Asp Ser 1160 Val Ala Met Lys Phe 1240 His	Gln Phe Lys Ser Gly 1145 Lys Ser Gly Lys Lys Lys Lys	Leu Lys Gln Glu 1130 Ala Pro Glu Val Ala 1210 Glu Glu Glu	Ile 1115 Leu Ser Leu Ile Arg 1195 His Asp	Val 1100 Lys Trp Gly Lys Leu 1180 Lys Ala Thr	Older 1085 Gln Gln Val Glu His 1165 Ile Val Lys Cys 1245 Leu	His Leu Asp Tyr Asn 1150 Glu Arg Val Met 1230 Ala	Leu Lys 1135 Glu Ser Leu Lys Leu 1215 Gln Gly	Asp 1120 Gly His Thr Ser Gln 1200 Glu Glu Asn
Gln Arg Gln 1090 Thr Ser Gln 1105 Gln Leu Arg Gln Gly Pro Lys Lys Thr 1155 Ser Ser Tyr 1170 Lys Leu Cys 1185 Gln Gln Arg Leu Leu Gln Ile Met Arg 1235 Gln Gln Asn	Val Sei Glu Vai Asp Vai Ser Ile 1140 Glu Glu Glu Glu Asn Tyi Val Gli Leu Leu 1220 Leu Al. 5 Gln Al.	L Leu L Asp 1110 E Val 25 L Pro L Gly C Arg L Glu 1190 L Arg D Tyr A His	Gln 1095 Asn Glu Met Thr Val 1175 Ser Asn Glu Glu Leu 1255 Val	1080 Ala Tyr Lys Asp Ser 1160 Val Ala Met Lys Phe 1240 His	Gln Phe Lys Ser Gly 1145 Lys Lys Ser Gly Lys Lys Lys	Leu Lys Gln Glu 1130 Ala Pro Glu Val Ala 1210 Glu Gln His	Gln Ile 1119 Leu Ser Leu Ile Arg 1199 His Asp Asn Ile	Val 1100 Lys Trp Gly Lys Leu 1180 Lys Ala Thr Phe Asn 1260 Ile	Gln  Gln  Val  Glu  His  Ile  Ser  Val  Lys  Cys  1245  Leu  Cys	His Leu Asp Tyr Asn 1150 Glu Arg Val Met 1230 Ala Phe	Leu Lys 1135 Glu Ser Leu Lys Leu 1215 Gln Gly Leu	Asp 1120 Gly His Thr Ser Gln 1200 Glu 5 Glu Asn

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His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
         1300
                          1305
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
               1320
                              1325
      1315
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
                  1335
                                   1340
Tyr Asn Asp Arq Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
      1350
                       1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
            1365
                   1370
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
         1380 ' 1385
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
     1395 1400
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
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                                   1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
      1430
                               1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
            1445
                   1450
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
         1460 1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
            1480
                                      1485
     1475
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
  1490 1495
                                   1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
    1510 1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
                   1530
            1525
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
         1540 . 1545
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
     1555 1560
                                      1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                                   1580
   1570 1575
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
     1590 1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
          1605 1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
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Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
      1635 1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
        1655
                                   1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                                1675
    1670
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
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                             1690
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
         1700
                          1705
Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
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                                       1725
   1715
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
        1735
                                    1740
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
                              1755
               1750
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
            1765 1770 1775
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
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	1780		17	85		17	90	
Glu Gly Gly 1795		Thr Ile	Gln Hi 1800	s Ser P		Cys Ar	g Leu	Thr
Glu Asp Lys 1810	Lys Ser	Glu Lys 1819		e Lys V	al Phe 1820		p Arg	Met
Lys Val Ala 1825	Gln Gln	Glu Ile 1830	Lys Al		al Thr .835	Val As	n Thr	Ser 1840
Asp Leu Gly	Asn Lys 1845	_	Asp As	p Glu V 1850	al Asp	Arg As	p Ala 1855	
Ser Arg Lys	Lys Ala 1860	Lys Glu		r Thr G 65	ln Ile	Thr Gl 18		Val
Arg Asp Gln 1875		Glu Ala	Ser Al 1880	a Ala T	hr Arg	Lys Al 1885	a Phe	Thr
Thr Phe Arg 1890	Arg Glu	Ala Asp 1899		p Asp H	lis Tyr 1900		r Gly	Glu
Gly Thr Gln 1905	Ala Thr	Thr Asp 1910	Lys Al		Asp Asp .915	Leu Gl	u Met	Ser 1920
Ala Val Ile	Thr Ile 1925		Pro Il	e Leu A 1930	arg Phe	Leu Gl	n Leu 193!	
Cys Glu Asn	His Asn 1940	Arg Asp		n Asn P 45	he Leu	Arg Cy 19		Asn
Asn Lys Thr 1955	_	Asn Leu	Val Cy 1960	s Glu T	Thr Leu	Gln Ph 1965	e Leu	Asp
Cys Ile Cys 1970	Gly Ser	Thr Thr		y Leu G	ly Leu 1980		y Leu	Tyr
Ile Asn Glu 1985	Lys Asn	Val Ala 1990	Leu Il		ln Thr	Leu Gl	u Ser	Leu 2000
Thr Glu Tyr	Cys Gln 2005		Cys Hi	s Glu A 2010	Asn Gln	Asn Cy	s Ile 201	
Thr His Glu	Ser Asn 2020	Gly Ile	_	e Ile T 25	Thr Ala	Leu Il 20		Asn
Asp Ile Asn 2035	5		2040		_	2045		
Lys Asn Asn 2050	Ala Ser	Lys Leu 205		u Ala I	le Met 2060		r Arg	His
Asp Ser Glu 2065		2070		2	2075	_		2080
Leu Val Glu	2089	5		2090			209	5
Glu Asp Gly	2100		21	.05		21	10	
Gly His Asn 2115	5		2120			2125		
Glu Leu Gln 2130	Thr Met	Leu Lys 213		y Gly G	Gln Val 2140		y Asp	Glu
Ala Leu Glu 2145	Phe Tyr						e Val	Arg 2160
Leu Asp Arg	Thr Met	Glu Gln	Ile Va			Pro Se	r Ile 217	
Glu Phe Leu			_	u Arg 1 .85	Ile Tyr		r Thr 90	Glu
Arg Asp Glu 2195	_	Ser Lys	Ile As 2200	n Asp I	Phe Phe	Leu Ar 2205	g Ser	Glu
Asp Leu Phe 2210		Met Asn 221	Trp Gl	n Lys I	Lys Leu 2220		a Gln	Pro
Val Leu Tyr	Trp Cys	Ala Arg				Ser Se	r Ile	
2225 Phe Asn Leu	Ala Val		Asn Le		2235 Val Ala	Phe Ph	e Tyr 225	
Phe Lys Gly					Pro His			

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Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
 2275 2280
Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
                 2295 2300
Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
     2310 2315
Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
                           2330 2335
            2325
Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
         2340
                       2345
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
                     2360
                                     2365
His Glu Phe Phe Tyr Ser Leu Leu Phe Asp Leu Val Tyr Arg Glu
                  2375
                                  2380
Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
               2390
                               2395
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
            2405
                           2410
Ile Val Gly Tyr Leu Phe Phe Lys Asp Phe Ile Leu Glu Val Asp
              2425 2430
         2420
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
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                                     2445
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
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                                  2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
                               2475
               2470
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
                           2490
            2485
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Val Gly Asp Val
         2500
                        2505
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
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                                     2525
Tyr Asp Leu Leu Phe Phe Met Val Ile Ile Val Leu Asn Leu
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Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
               2550 2555
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
           2565 2570
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
         2580 2585 2590
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                     2600 2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
               2615
                                 2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
      2630 2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
            2645
                           2650 2655
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
         2660 2665
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
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Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
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Asn Pro Gln Gln Pro Ala
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<212> PRT

<213> Artificial Sequence

<220>

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			420					425					430		
Val	Pro	Val 435		Pro	Ala	Glu	Val 440	Arg	Asp	Leu	Asp	Phe 445	Ala	Asn	Asp
Ala	Ser 450	Lys	Val	Leu	Gly	Ser 455	Ile	Ala	Gly	Lys	Leu 460	Glu	Lys	Gly	Thr
Ile 465	Thr	Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
Val	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
Val	Val	Phe	Ser 500	Lys	Pro	Asn	Arg	Glu 505	Arg	Gln	Lys	Leu	Met 510	Arg	Glu
		515		-			520	_				525	Pro		
	530					535					540		Gly		
545					550			_	_	555			Arg		560
				565					570				Ile	575	
		_	580					585					Leu 590 Leu		
		595					600					605	Val		
	610					615					620		Cys		
625	_				630					635			Lys		640
		_		645					650				Leu	655	
			660					665					670 Ala		
	_	675					680					685	Asp		
	690		_			695					700		Asp		
705					710					715			Arg		720
				725					730				Leu	735	
Asn	Glu	Ile	740 Ser	Gly	Gln	Leu	Asp	745 Val	Asp	Leu	Ile	Leu	750 Arg	Cys	Met
Ser	Asp	755 Glu	Asn	Leu	Pro	Tyr	760 Asp	Leu	Arg	Ala		765 Phe	Cys	Arg	Leu
	770 Leu	His	Met	His		775 Asp	Arg	Asp	Pro		780 Glu	Gln	Val	Thr	
785 Val	Lys	Tyr	Ala	_	790 Leu	Trp	Ser	Glu		795 Pro	Ser	Glu	Ile		800 Ile
Asp	Asp	Tyr		805 Ser	Ser	Gly	Ala		810 Lys	Asp	Glu	Ile	Lys	815 Glu	Arg
Phe	Ala	Gln 835	820 Thr	Met	Glu	Phe	Val 840	825 Glu	Glu	Tyr	Leu	Arg 845	830 Asp	Val	Val
Cys	Gln 850		Phe	Pro	Phe	Ser 855		Lys	Glu	Lys	Asn 860		Leu	Thr	Phe
Glu 865		Val	Asn	Leu	Ala 870		Asn	Leu	Ile	Tyr 875		Gly	Phe	Tyr	Asn 880
	Ser	Asp	Leu	Leu 885		Leu	Thr	Lys	Ile 890		Leu	Ala	Ile	Leu 895	
Cys	Val	His	Val 900		Thr	Ile	Phe	Pro 905		Ser	Lys	Met	Thr 910		Gly

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Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                        920
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met
                    935
Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
             965
                               970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
          980
                           985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
                       1000
                                         1005
      995
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
                   1015
                                      1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                1030
                        1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
             1045 1050 1055
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
                  1065 1070
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                       1080
                                        1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
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                                     1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
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                                  1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
                              1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
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Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                       1160 1165
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
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Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
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                                  1195
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
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Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
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Ile Met Arq Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
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Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
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Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
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Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
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His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
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          1300
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
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                                         1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
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                                      1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
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                                  1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
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His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
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                           1385
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Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
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Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
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Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
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Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
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                           1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
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                       1480
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
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                                     1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
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                                 1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
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Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
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Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
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                                        1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                    1575 1580
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
                1590
                                1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
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                              1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
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         1620
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
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Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
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Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
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                                1675 . 1680
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
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Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
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                                        1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
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Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Asp Leu Thr Ser Phe Gly
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Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
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                              1770
Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
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Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
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Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
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Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
                1830
                                 1835
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
             1845
                              1850
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Ile Lys Ala
         1860 1865 1870
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp
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		1875					1880					1885			
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Thr 1905		Ile	Thr	Glu	Glu 1910	Val	Arg	Asp	Gln	Leu 1915		Glu	Ala	Ser	Ala 1920
		Arg	Lys	Ala 1925	Phe	Thr	Thr	Phe	Arg 1930	Arg		Ala	Asp	Pro 1935	
Asp	His	Tyr	Gln 1940	Ser		Glu	Gly	Thr 1945	Gln		Thr	Thr	Asp 1950	Lys	
Lys	Asp	Asp 1955		Glu	Met	Ser	Ala 1960		Ile	Thr	Ile	Met 1965		Pro	Ile
Leu	Arg 1970		Leu	Gln	Leu	Leu 1975		Glu	Asn	His	Asn 1980		Asp	Leu	Gln
Asn 1985		Leu	Arg	Сув	Gln 1990	Asn )	Asn	Lys	Thr	Asn 1995		Asn	Leu	Val	Cys 2000
Glu	Thr	Leu	Gln	Phe 2005		Asp	Cys	Ile	Cys 2010		Ser	Thr	Thr	Gly 2015	
Leu	Gly	Leu	Leu 2020	-	Leu	Tyr	Ile	Asn 2025		Lys	Asn	Val	Ala 2030		Ile
Asn	Gln	Thr 2035		Glu	Ser	Leu	Thr 2040		Tyr	Cys	Gln	Gly 2049		Cys	His
Glu	Asn 2050		Asn	Cys	Ile	Ala 2055		His	Glu	Ser	Asn 2060	_	Ile	Asp	Ile
Ile 2065		Ala	Leu	Ile	Leu 2070	Asn )	Asp	Ile	Asn	Pro 2075		Gly	Lys	Lys	Arg 2080
Met	Asp	Leu	Val	Leu 2085		Leu	Lys	Asn	Asn 2090		Ser	Lys	Leu	Leu 2095	
Ala	Ile	Met	Glu 2100		Arg	His	Asp	Ser 2105		Asn	Ala	Glu	Arg 2110		Leu
Tyr	Asn	Met 2115	_	Pro	Lys	Glu	Leu 2120		Glu	Val	Ile	Lys 212	_	Ala	Tyr
Met	Gln 2130	_	Glu	Val	Glu	Phe 2135		Asp	Gly	Glu	Asn 2140		Glu	Asp	Gly
77-						213	,				214	,			
A1a 2145		Ser	Pro	Arg	Asn 2150	Val		His	Asn	Ile 2155	Tyr		Leu	Ala	His 2160
2145	5			_	2150 Asn	Val	Gly			2155 Thr	Tyr	Ile			2160 Gly
2145 Gln	Leu	Ala	Arg	His 2169 Gly	2150 Asn	Val	Gly Glu	Leu	Gln 2170 Glu	2155 Thr	Tyr Met	Ile Leu	Lys	Pro 2179 His	2160 Gly 5
2145 Gln Gly	Leu Gln	Ala Val	Arg Asp 2180 Glu	His 2169 Gly	2150 Asn S Asp	Val ) Lys	Gly Glu Ala	Leu Leu 2189 Asp	Gln 2170 Glu	2155 Thr ) Phe	Tyr Met Tyr	Ile Leu Ala	Lys Lys 2190 Gln	Pro 2175 His	2160 Gly 5 Thr
2145 Gln Gly Ala Phe	Leu Gln Gln	Ala Val Ile 2199 Val	Arg Asp 2180 Glu	His 2169 Gly Ile Ser	2150 Asn Asp Val	Val ) Lys Glu	Gly Glu Ala Leu 2200 Glu	Leu Leu 2185 Asp	Gln 2170 Glu Arg	2155 Thr ) Phe Thr	Tyr Met Tyr Met	Leu Ala Glu 2209 Glu	Lys Lys 2190 Gln	Pro 2175 His ) Ile	2160 Gly Thr Val
2145 Gln Gly Ala Phe	Leu Gln Gln Pro 2210 Ile	Ala Val Ile 2199 Val	Arg Asp 2180 Glu Fro	His 2169 Gly ) Ile Ser	2150 Asn Asp Val	Val Lys Glu Arg Cys 2215	Gly Glu Ala Leu 2200 Glu	Leu Leu 2185 Asp ) Phe	Gln 2170 Glu Arg Leu	2155 Thr ) Phe Thr	Tyr Met Tyr Met Lys 2220 Gly	Leu Ala Glu 2209 Glu	Lys Lys 2190 Gln 5 Ser	Pro 2179 His O Ile Lys	2160 Gly Thr Val
2145 Gln Gly Ala Phe Arg 2225	Leu Gln Gln Pro 2210 Ile	Ala Val Ile 2199 Val ) Tyr	Arg Asp 2180 Glu Pro	His 2169 Gly Ile Ser	Asn Asp Val Ile Thr 2230 Ser	Val Lys Glu Arg Cys 2215	Gly Glu Ala Leu 2200 Glu Arg	Leu Leu 2185 Asp ) Phe	Gln 2170 Glu Arg Leu	Thr Phe Thr Gln 2235 Asn	Tyr Met Tyr Met Lys 2220 Gly	Leu Ala Glu 2209 Glu Ser	Lys Lys 2190 Gln Ser Lys	Pro 2175 His ) Ile Lys	2160 Gly Thr Val Leu Asn 2240 Gln
Gly Ala Phe Arg 2225 Asp	Leu Gln Gln Pro 2210 Ile Phe	Ala Val Ile 2199 Val Tyr Phe	Arg Asp 2180 Glu Fro Tyr Leu	His 2165 Gly ) Ile Ser Thr Arg 2245 Ala	Asn Asp Val Ile Thr 2230 Ser	Val Lys Glu Arg Cys 2219 Glu Glu	Gly Glu Ala Leu 2200 Glu Arg Asp	Leu Leu 2189 Asp Phe Asp	Gln 2170 Glu Arg Leu Glu Phe 2250 Tyr	Thr Phe Thr Thr 2235 Asn	Tyr Met Tyr Met Lys 2220 Gly Glu	Ile Leu Ala Glu 2209 Glu Ser Met	Lys Lys 2190 Gln Ser Lys Asn	Pro 2179 His Ile Lys Ile Trp 2259	2160 Gly Thr Val Leu Asn 2240 Gln
Gly Ala Phe Arg 2225 Asp Lys	Gln Gln Pro 2210 Ile Phe	Ala Val Ile 2199 Val Tyr Phe Leu	Arg Asp 2180 Glu Fro Tyr Leu Arg 2260 Ser	His 2165 Gly Ile Ser Thr Arg 2245 Ala	Asp Val Ile Thr 2230 Ser	Val Lys Glu Arg Cys 2215 Glu Glu Pro	Gly Glu Ala Leu 2200 Glu Arg Arg Val	Leu 2185 Asp Phe Asp Leu 2265 Asn	Gln 2170 Glu Arg Leu Glu Phe 2250	Thr Thr Gln 2235 Asn Trp	Tyr Met Tyr Met Lys 2220 Gly Glu Cys	Leu Ala Glu 2209 Glu Ser Met Ala	Lys 2190 Gln Ser Lys Asn Arg 2270 Met	Pro 2179 His Ile Lys Ile Trp 2259 Asn	2160 Gly Thr Val Leu Asn 2240 Gln
Gly Ala Phe Arg 2225 Asp Lys Ser	Gln Gln Pro 2210 Ile Phe Lys Phe	Ala Val Ile 2199 Val Tyr Phe Leu Trp 2279 Ala	Arg Asp 2180 Glu Fro Tyr Leu Arg 2260 Ser	His 2165 Gly Ile Ser Thr Arg 2245 Ala Ser	Asp Val Ile Thr 2230 Ser Gln Ile	Val Lys Glu Arg Cys 2215 Glu Glu Pro	Gly Glu Ala Leu 2200 Glu Arg Arg Val Phe 2280	Leu 2185 Asp Phe Asp Leu 2265 Asn	Gln 2170 Glu Arg Leu Glu Phe 2250 Tyr Leu	Thr Thr Gln 2235 Asn Trp	Tyr Met Tyr Met Lys 2220 Gly Glu Cys Val	Leu Ala Glu 2209 Glu Ser Met Ala Leu 228 Gly	Lys 2190 Gln Ser Lys Asn Arg 2270 Met	Pro 2179 His Ile Lys Ile Trp 2259 Asn	2160 Gly Thr Val Leu Asn 2240 Gln Met
Gly Ala Phe Arg 2225 Asp Lys Ser Leu	Gln Gln Pro 2210 Ile Phe Lys Phe Val 2290 Pro	Ala Val Ile 2199 Val Tyr Phe Leu Trp 2279 Ala	Arg Asp 2180 Glu Pro Tyr Leu Arg 2260 Ser Phe	His 2169 Gly Ile Ser Thr Arg 2249 Ala Ser	Asp Val Ile Thr 2230 Ser Gln Ile	Lys Glu Arg Cys 2215 Glu Pro Ser Pro 2295 Leu	Gly Glu Ala Leu 2200 Glu Arg Arg Val Phe 2280 Phe	Leu 2185 Asp Phe Asp Leu 2265 Asn Lys	Gln 2170 Glu Arg Leu Glu Phe 2250 Tyr Leu Gly	Thr Thr Gln 2235 Asn Trp Ala Val	Tyr Met Tyr Met Lys 2220 Gly Glu Cys Val Arg 2300 Met	Leu Ala Glu 2209 Glu Ser Met Ala Leu 2289 Gly	Lys 2190 Gln Ser Lys Asn Arg 2270 Met Gly	Pro 2179 His Ile Lys Ile Trp 2259 Asn O	2160 Gly Thr Val Leu Asn 2240 Gln Met Leu
Gly Ala Phe Arg 2225 Asp Lys Ser Leu Glu 2305	Gln Gln Pro 2210 Ile Phe Lys Phe Val 2290 Pro	Ala Val Ile 2199 Val Tyr Phe Leu Trp 2279 Ala His	Arg Asp 2180 Glu Pro Tyr Leu Arg 2260 Ser Phe	His 2169 Gly Ile Ser Thr Arg 2249 Ala Ser Phe	Asp Val Ile Thr 2230 Ser Gln Ile Tyr Gly 2310 Leu	Lys Glu Arg Cys 2215 Glu Pro Ser Pro 2295 Leu	Gly Glu Ala Leu 2200 Glu Arg Arg Val Phe 2280 Phe Leu	Leu 2185 Asp Phe Asp Leu 2265 Asn Lys	Gln 2170 Glu Arg Leu Glu Phe 2250 Tyr Leu Gly Thr	Thr Thr Gln 2235 Asn Trp Ala Val Ala 2315 Gly	Tyr Met Tyr Met Lys 2220 Gly Glu Cys Val Arg 2300 Met	Leu Ala Glu 2209 Glu Ser Met Ala Leu 2280 Gly Leu	Lys 2190 Gln Ser Lys Asn Arg 2270 Met Gly Ile	Pro 2179 His Ile Lys Ile Trp 2259 Asn O Asn Thr	2160 Gly Thr Val Leu Asn 2240 Gln Met Leu Leu Leu 2320 Ile
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                       2375
                                          2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
                   2390
                                      2395
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu
               2405
                                  2410
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
                               2425
           2420
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
                          2440
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
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                                          2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
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Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
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Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
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                           2520
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
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                                          2540
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                  2550
                                      2555
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                                  2570
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
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Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
                          2600
                                  - 2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
                      2615
                                          2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
                   2630
                                      2635
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
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                                 2650
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
                                                 2670
           2660
                              2665
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
                          2680
                                              2685
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
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                                          2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
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                                      2715
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
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His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
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<211> 2710
<212> PRT
<213> Artificial Sequence
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                           40
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
                       55
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
                                        75
                   70
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
                                   90
               85
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
           100
                               105
                                                   110
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
                                    · 125
                           120
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                       135
                                           140
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
                   150
                                       155
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
                                   170
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
                               185
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
                           200
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                       215
                                           220
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
                   230
                                       235
Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His
               245
                                   250
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
                               265
           260
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
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His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
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                       295
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
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                                       315
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
                                   330
               325
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
                               345
           340
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
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Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
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                       375
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
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                                       395
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu
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                                    410
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
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                                                    430
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
                            440
                                               445
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                        455
                                            460
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
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Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
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Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys

T T C T] -			985			990		
995	Phe Lys	Arg Glu 100		p Glu	Ser Asn		Gln	Ser
Ser Glu Thr Ser 1010	Ser Gly			n Glu	Gly Pro	Ser	Asn	Val
Pro Gly Ala Leu	Asp Phe	Glu His	Ile Gl	u Glu 1035	Gln Ala	Glu	Gly	Ile 1040
Phe Gly Gly Ser						Asp	His 1055	Gly
Gly Arg Thr Phe	Leu Arg	Val Leu			Thr Met	His 1070	Asp	
Pro Pro Leu Val	Ser Gly	Ala Leu 108	Gln Le	u Leu	Phe Arg	His		Ser
Gln Arg Gln Glu 1090	Val Leu	Gln Ala 1095	Phe Ly	s Gln	Val Gln 1100	Leu	Leu	Val
Thr Ser Gln Asp	Val Asp 1110	Asn Tyr	Lys Gl	n Ile 1115	Lys Glr	Asp	Leu	Asp 1120
Gln Leu Arg Ser	Ile Val 1125	Glu Lys		u Leu 30	Trp Val	Tyr	Lys 1135	_
Gln Gly Pro Asp 114		Met Asp	Gly Al 1145	a Ser	Gly Glu	Asn 1150		His
Lys Lys Thr Glu 1155	Glu Gly	Thr Ser		o Leu	Lys His		Ser	Thr
Ser Ser Tyr Asn 1170					Leu Ile 1180	Arg	Leu	Ser
Lys Leu Cys Val		Ser Ala	Ser Va		Lys Ser	Arg	Lys	Gln 1200
Gln Gln Arg Leu			_			Val	Leu 1215	Glu
Leu Leu Gln Ile 122	Pro Tyr	Glu Lys			Thr Lys	Met 1230	Gln	
Ile Met Arg Leu		Glu Phe		n Asn	Phe Cys			Asn
1235		124			124			
		124 Leu His	0	s Ile	124	5 .	Leu	
1235 Gln Gln Asn Gln	Ala Leu	124 Leu His 1255 Val Thr	O Lys Hi	s Ile	124 Asn Leu 1260 Ile Phe	5 Phe		Asn
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1235 Gln Gln Asn Gln 1250 Pro Gly Ile Leu 1265	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His	124 Leu His 1255 Val Thr	Lys Hi  Met Gl  Glu Ar  12  Asn Va	n His 1275 g Val	124 Asn Leu 1260 Ile Phe Val Glr	5 Phe Met	Asn Phe 1295 Phe	Asn Asn 1280 Val
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His	124 Leu His 1255 Val Thr Ile Asn Gly Arg	Duranti Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph	n His 1275 g Val 190	Asn Leu 1260 Ile Phe Val Glr Tyr Ile	Phe Met His Lys 1310	Asn Phe 1295 Phe	Asn Asn 1280 Val Leu
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His O Lys Ala	124 Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn	O Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph	n His 1275 g Val 190 ul Gln	Asn Leu 1260 Ile Phe Val Glr Tyr Ile Lys Lys 132 Asp Val	Phe Met His Lys 1310 Cys	Asn Phe 1295 Phe Gln	Asn Asn 1280 Val Leu Asp
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala 1330  Tyr Asn Asp Arg	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His O Lys Ala Glu Leu Ala Ser	Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn 1335 Phe Gln	Duranti Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph O	s Ile In His 1275 Tg Val 190 Il Gln The Ile Ty Glu The Ile	Asn Leu 1260 Ile Phe Val Glr Tyr Ile Lys Lys 132 Asp Val 1340 Gln Met	Figure 15 Phe Fi	Asn Phe 1295 Phe Gln Val	Asn 1280 Val Leu Asp Phe Ser
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala 1330	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His Clys Ala Glu Leu Ala Ser 1350 Met Asp	124 Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn 1335 Phe Gln	O Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph O Ser Gl Thr Le	n His 1275 g Val 190 ll Gln le Ile y Glu lu Ile 1355 to Leu	Asn Leu 1260 Ile Phe Val Glr Tyr Ile Lys Lys 132 Asp Val 1340 Gln Met	5 Phe His Lys 1310 Cys Leu	Asn Phe 1295 Phe Gln Val Arg	Asn 1280 Val Leu Asp Phe Ser 1360 Ile
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala 1330  Tyr Asn Asp Arg 1345  Glu Arg Asp Arg	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His U Lys Ala Glu Leu Ala Ser 1350 Met Asp 1365 Leu Leu	124 Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn 1335 Phe Gln Glu Asn	Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph O Ser Gl Thr Le Ser Pr 13 Cys Th	n His 1275 g Val 190 l Gln le Ile y Glu lu Ile 1355 to Leu	Asn Leu 1260 Ile Phe Val Glr Tyr Ile Lys Lys 132 Asp Val 1340 Gln Met	Phe  Met  His  1310  Cys  Leu  Met  Tyr	Asn Phe 1295 Phe Gln Val Arg His 1375 Val	Asn 1280 Val Leu Asp Phe Ser 1360 Ile
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala 1330  Tyr Asn Asp Arg 1345  Glu Arg Asp Arg  His Leu Val Glu 138  Thr Glu Ile Lys	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His Clys Ala Glu Leu Ala Ser 1350 Met Asp 1365 Leu Leu 0	124 Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn 1335 Phe Gln Glu Asn Ala Val	Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph O Ser Gl Thr Le Ser Pr 13 Cys Th 1385 Leu Pr	n His 1275 g Val 190 l Gln le Ile y Glu lu Ile 1355 to Leu 170 lr Glu	Asn Leu 1260 Ile Phe Val Glr Tyr Ile Lys Lys 132 Asp Val 1340 Gln Met Cly Lys Asp Asp	Phe His Lys 1310 Cys Leu Met Tyr Asn 1390 Ile	Asn Phe 1295 Phe Gln Val Arg His 1375 Val	Asn 1280 Val Leu Asp Phe Ser 1360 Ile Tyr
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Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala 1330  Tyr Asn Asp Arg 1345  Glu Arg Asp Arg  His Leu Val Glu 138  Thr Glu Ile Lys 1395  Val Val Thr His 1410  Asn Phe Leu Asn	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His Lys Ala Glu Leu Ala Ser 1350 Met Asp 1365 Leu Leu Cys Asn Glu Asp His Cys	Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn 1335 Phe Gln Glu Asn Ala Val Ser Leu 140 Cys Ile 1415 Tyr Val	Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph O Ser Gl Thr Le Ser Pr 13 Cys Th 1385 Leu Pr O Pro Gl	n His 1275 Tg Val 190 Il Gln The Ile 1355 To Leu 170 The Glu To Leu Lu Val The Glu The	Asn Leu 1260 Ile Phe Val Glr Tyr Ile Lys Lys 1340 Gln Met Gly Lys Asp Asp 140 Lys Ile 1420 Val Glr	Phe His Lys 1310 Cys Leu Met Tyr Asn 1390 Ile 5 Ala	Asn Phe 1295 Phe Gln Val Arg His 1375 Val Val	Asn 1280 Val Leu Asp Phe Ser 1360 Ile Tyr Arg Ile Glu
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala 1330  Tyr Asn Asp Arg 1345  Glu Arg Asp Arg  His Leu Val Glu 138  Thr Glu Ile Lys 1395  Val Val Thr His 1410	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His Lys Ala Glu Leu Ala Ser 1350 Met Asp 1365 Leu Leu Cys Asn Glu Asp His Cys 1430 Asn His	Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn 1335 Phe Gln Glu Asn Ala Val Ser Leu 140 Cys Ile 1415 Tyr Val	Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph O Ser Gl Thr Le Ser Pr 13 Cys Th 1385 Leu Pr O Pro Gl Asp Th	n His 1275 g Val 90 al Gln ae Ile 1355 to Leu 70 ar Glu to Leu u Val ar Glu 1435 eu Phe	Asn Leu 1260 Ile Phe Val Glr. Tyr Ile Lys Lys 1340 Gln Met Gly Lys Asp Asp 140 Lys Ile 1420 Val Glu	Phe His Lys 1310 Cys Leu Met Tyr Asn 1390 Ile S Ala	Asn Phe 1295 Phe Gln Val Arg His 1375 Val Val Tyr Lys Leu	Asn 1280 Val Leu Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val
Gln Gln Asn Gln 1250  Pro Gly Ile Leu 1265  Phe Gln Leu Cys  His Cys Ile Glu 130  Gln Thr Ile Val 1315  Met Val Met Ala 1330  Tyr Asn Asp Arg 1345  Glu Arg Asp Arg His Leu Val Glu 138  Thr Glu Ile Lys 1395  Val Val Thr His 1410  Asn Phe Leu Asn	Ala Leu Glu Ala 1270 Ser Glu 1285 Thr His Lys Ala Glu Leu Ala Ser 1350 Met Asp 1365 Leu Leu Cys Asn Glu Asp His Cys 1430 Asn His 1445 Ala Cys	Leu His 1255 Val Thr Ile Asn Gly Arg Glu Gly 132 Val Asn 1335 Phe Gln Glu Asn Ala Val Ser Leu 140 Cys Ile 1415 Tyr Val Met Trp	Lys Hi Met Gl Glu Ar 12 Asn Va 1305 Lys Ph O Ser Gl Thr Le Ser Pr 13 Cys Th 1385 Leu Pr O Pro Gl Asp Th Lys Le	n His 1275 Tg Val 190 Il Gln The Ile 1355 To Leu 170 To Leu To Leu 1435 To Leu 1435 To Leu 1435	Asn Leu 1260 Ile Phe Val Glr. Tyr Ile Lys Lys 1340 Gln Met Cly Lys Asp Asp 140 Lys Ile 1420 Val Glu Asr	Phe His Lys 1310 Cys Leu Met Tyr Asn 1390 Ile Ala Met	Asn Phe 1295 Phe Gln Val Arg His 1375 Val Val Tyr Lys Leu 1455 Ala	Asn 1280 Val Leu Asp Phe Ser 1360 Ile Tyr Arg Ile Glu 1440 Val

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Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
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      1475
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                    1495
                                     1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
                                 1515
                1510
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
             1525
                              1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
          1540
                          1545
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
             1560 1565
      1555
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                           1580
                   1575
Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
       1590
                       1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
                    1610 1615
       1605
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
         1620
                 1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
                      1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
          1655
                                    1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                1670
                                 1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
                              1690
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
         1700 1705 1710
Arg Arg Glu Glu Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
                       1720
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
                   1735
                                     1740
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
                1750
                                 1755
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
             1765
                              1770
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
         1780
                          1785
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
                       1800
                                        1805
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
                   1815
                                     1820
Lys Val Ala Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
                1830
                                 1835
Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
            1845
                              1850
Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
         1860
                          1865
Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
                       1880
                                        1885
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
                   1895
                                     1900
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
                1910
                        1915
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
             1925
                              1930
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
   1940 1945
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
```

1955	19	60	.1965
Cys Ile Cys Gly Se	r Thr Thr Gl		Leu Leu Gly Leu Tyr 1980
Ile Asn Glu Lys As 1985	n Val Ala Le <sup>.</sup> 1990	u Ile Asn Gln 1995	Thr Leu Glu Ser Leu 2000
~ -	n Gly Pro Cy 05	s His Glu Asn 2010	Gln Asn Cys Ile Ala 2015
Thr His Glu Ser As	n Gly Ile As	p Ile Ile Thr 2025	Ala Leu Ile Leu Asn 2030
Asp Ile Asn Pro Le 2035	u Gly Lys Ly 20		Leu Val Leu Glu Leu 2045
Lys Asn Asn Ala Se 2050	r Lys Leu Le 2055		Met Glu Ser Arg His 2060
Asp Ser Glu Asn Al 2065	a Glu Arg Il 2070	e Leu Tyr Asn 2075	Met Arg Pro Lys Glu 2080
20	85	2090	Gly Glu Val Glu Phe 2095
2100		2105	Ser Pro Arg Asn Val 2110
2115	21	20	Ala Arg His Asn Lys 2125
2130	2135		Val Asp Gly Asp Glu 2140
2145	2150	2155	•
21	65	2170	Val Pro Ser Ile Cys 2175
2180	_	2185	Tyr Tyr Thr Thr Glu 2190
2195	22	00	Phe Leu Arg Ser Glu 2205
2210	2215		Leu Arg Ala Gln Pro 2220
2225	2230	2235	
. 22	45	2250	Ala Phe Phe Tyr Pro 2255
2260		2265	His Trp Ser Gly Leu 2270
2275	22	80	Val Ile Ala Leu Pro 2285
2290	2295		Thr Ile Leu Arg Leu 2300 Leu Leu Gly Ala Phe
2305	2310	2315	_
23	25	2330	2335 Leu Asp Val Glu Phe
2340		2345	2350 Met Gly Leu Phe Val
2355	23	60	2365
2370	2375		Leu Val Tyr Arg Glu 2380 Arg Asn Gly Arg Pro
2385	2390	2395	
	a Ala Leu Al 05	a Leu Ile Leu 2410	Val Tyr Leu Phe Ser 2415
Ile Val Gly Tyr Le 2420	u Phe Phe Ly	s Asp Asp Phe 2425	Ile Leu Glu Val Asp 2430
Arg Leu Pro Asn Gl 2435	u Thr Ala Gl 24	_	Gly Glu Ser Leu Ala 2445

```
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
   2450
                       2455
                                          2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
                   2470
                                      2475
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
               2485
                                   2490
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Val Gly Asp Val
                               2505
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
                           2520
                                              2525
       2515
Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
   2530
                       2535
                                           2540
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
                   2550
                                       2555
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
               2565
                                   2570
                                                       2575
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
           2580
                               2585
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                           2600
                                 :
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
                       2615
                                           2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
                   2630
                                       2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
               2645
                                   2650
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
           2660
                               2665
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
                           2680
                                               2685
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
                       2695
                                           2700
Asn Pro Gln Gln Pro Ala
2705
                   2710
```

```
<210> 10
```

## <220>

<223> Description of Artificial Sequence:/note = synthetic construct

## <400> 10

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 20 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn · 4 0 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser

<sup>&</sup>lt;211> 2749

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Artificial Sequence

```
120
        115
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                        135
                                            140
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
                                        155
                    150
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
                                    170
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
                                185
            180
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
                            200
                                                205
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                                            220
                        215
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
                   230
                                        235
Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His
                                    250
                245
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
                                                    270
                                265
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
                            280
                                                285
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
                        295
                                            300
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
                                        315
                   310
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
                                    330
                                           .
                325
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
                               345
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
                            360
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
                        375
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
                   390
                                        395
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu
                                    410
                405
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
                                425
           420
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
                            440
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                        455
                                            460
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
                    470
                                        475
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
                                    490
                485
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
                                505
            500
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
                            520
                                                525
        515
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
                                            540
                        535
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
                    550
                                        555
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr İle Ala Lys
                565
                                    570
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
            580
                                585
                                                    590
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
                            600
                                                605
```

```
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
                        615
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                   630
                                        635 •
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
               645
                                    650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
                                665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                            680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                        695
                                            700
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                   710
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
                                    730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
                                745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                            760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                        775
                                            780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                   790
                                       795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
               805
                                    810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
           820
                                825
                                                   830
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                                              845
                            840
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                       855
                                           860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
                   870
                                        875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
               885
                                    890
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
           900
                                905
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                           920
                                               925
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met
                       935
                                            940
Thr Pro Met Ala Ala Aro Glu Gly Asn Val Lys Gln Ala Glu Pro
                   950
                                       955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                   970
               965
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
           980
                               985
                                                    990
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
       995
                           1000
                                               1005
Ser Glu Thr Ser Ser Gly Asn Ser Ser Glu Glu Gly Pro Ser Asn Val
                       1015
                                           1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                   1030
                                       1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
                                   1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
                               1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                           1080
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
```

1090	109	5	1100	
Thr Ser Gln Asp		Tyr Lys Gln		
1105 Gln Leu Arg Ser	1110	Lve Ser Glu	1115 Trn Val	Tyr Lys Gly
orn bed arg ber	1125	113		1135
Gln Gly Pro Asp		Asp Gly Ala 1145	Ser Gly Glu	Asn Glu His 1150
Lys Lys Thr Glu 1155	Glu Gly Thr	Ser Lys Pro	Leu Lys His	
Ser Ser Tyr Asn 1170	Tyr Arg Val	Val Lys Glu		
Lys Leu Cys Val				Arg Lys Gln 1200
Gln Gln Arg Leu		Met Gly Ala		
	1205	121	0	1215
Leu Leu Gln Ile 1220		Lys Ala Glu 1225	Asp Thr Lys	Met Gln Glu 1230
Ile Met Arg Leu 1235	Ala His Glu	Phe Leu Gln 1240	Asn Phe Cys 1245	_
Gln Gln Asn Gln 1250	Ala Leu Leu 125	_	Ile Asn Leu 1260	Phe Leu Asn
Pro Gly Ile Leu		Thr Met Gln		
1265 Phe Gln Leu Cys	1270 Ser Glu Ile	Asn Glu Ara	1275 Val Val Gln	1280 His Phe Val
- -	1285	129	0	·· 1295
His Cys Ile Glu 1300	O·	1305		1310
Gln Thr Ile Val 1315	Lys Ala Glu	Gly Lys Phe 1320	Ile Lys Lys 1325	_
Met Val Met Ala 1330	Glu Leu Val		Glu Asp Val 1340	Leu Val Phe
Tyr Asn Asp Arg			Ile Gln Met	Met Arg Ser
1345	1350	. 0 .	1355	1360
Glu Arg Asp Arg	1365 .	137	0	1375
His Leu Val Glu 1380		Val Cys Thr 1385	Glu Gly Lys	Asn Val Tyr 1390
Thr Glu Ile Lys 1395	Cys Asn Ser	Leu Leu Pro 1400	Leu Asp Asp	_
Val Val Thr His 1410	Glu Asp Cys 141		Val Lys Ile 1420	Ala Tyr Ile
Asn Phe Leu Asn	His Cys Tyr		Glu Val Glu	
1425 Ile Tyr Thr Ser	1430 Asn His Met	Trn Lvs Leu	1435 Phe Glu Asn	Dhe Leu Val
ite tyr im ber	1445	145		1455
Asp Ile Cys Arg		Asn Thr Ser 1465	Asp Arg Lys	His Ala Asp 1470
Ser Val Leu Glu 1475	Lys Tyr Val	Thr Glu Ile	Val Met Ser 1485	
Thr Phe Phe Ser	Ser Pro Phe	~	Ser Thr Thr 1500	Leu Gln Thr
Arg Gln Pro Val	Phe Val Gln			
His Cys Asn Trp	1510 Leu Met Pro	Ser Gln Lvs		Glu Ser Cvs
o, o non rip	1525	153		1535
Ile Arg Val Leu 1540	Ser Asp Val			
Val Asp Leu Asp 1555			Phe Leu Lys	
Ile Val Gln Lys		1560	1569	5

```
Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
                  1590
                                     1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
              1605
                                 1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
          1620
                             1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
       1635
                         1640
                                            1645
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
                      1655
                                        1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arq
                  1670
                                     1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
                                 1690
              1685
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
           1700
                             1705
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
       1715
                         1720
                                            1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
   1730
                      1735
                                        1740
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Glu Leu Thr Ser Phe Gly
                  1750
                                    1755
Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
              1765
                                 1770
Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
          1780
                            1785
                                               1790
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
                         1800
                                            1805
Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
                     1815
                                        1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
                 1830
                                    1835
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
                                1850
              1845
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala
          1860
                            1865
                                               1870
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp
                         1880
                                           1885
Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
                     1895
                                        1900
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
                  1910
                                    1915
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
              1925
                                1930
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
          1940
                            1945
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
       1955
                         1960
Leu Arg Phe Leu Gln Leu Cys Glu Asn His Asn Arg Asp Leu Gln
                     1975
                                        1980
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
                  1990
                                    1995
Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
                                2010
Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
                             2025
Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
                         2040
                                           2045
Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
               2055
                                        2060
Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
```

2065	2070	2075	2080
	Glu Leu Lys Asn Asn	Ala Ser Lys Leu L	
Ala Ile Met Glu Ser 2100	Arg His Asp Ser Glu 2105		le Leu
Tyr Asn Met Arg Pro 2115	Lys Glu Leu Val Glu 2120	Val Ile Lys Lys A 2125	ala Tyr
Met Gln Gly Glu Val 2130	Glu Phe Glu Asp Gly 2135	Glu Asn Gly Glu A 2140	sp Gly
2145	Asn Val Gly His Asn 2150	2155	2160
216		02	175
Gly Gln Val Asp Gly 2180	Asp Glu Ala Leu Glu 2185	Phe Tyr Ala Lys H 2190	lis Thr
2195	Val Arg Leu Asp Arg 2200	2205	
2210	Ile Cys Glu Phe Leu 2215	2220	
2225	Thr Glu Arg Asp Glu 2230	2235	2240
224.		0 2	255
2260	Gln Pro Val Leu Tyr 2265	2270	
2275	Ile Ser Phe Asn Leu 2280	2285	
2290	Tyr Pro Phe Lys Gly 2295	2300	
2305	Gly Leu Leu Trp Thr 2310	2315	2320
232		0 2	2335
2340	Arg Leu Ile Phe Ser 2345	2350	
2355	Ala Phe Asn Val Cys 2360	2365	
2370	Asn Cys Gly Thr Phe 2375	2380	-
2385	Glu Phe Leu Tyr His 2390	2395	2400
Cys Ala Met Gly Leu 240	Phe Val His Glu Phe 5 241		Leu Leu 2415
Phe Asp Leu Val Tyr 2420	Arg Glu Glu Thr Leu 2425	Leu Asn Val Ile L 2430	ys Ser
Val Thr Arg Asn Gly 2435	Arg Pro Ile Ile Leu 2440	Thr Ala Ala Leu A 2445	Ala Leu
Ile Leu Val Tyr Leu 2450	Phe Ser Ile Val Gly 2455	Tyr Leu Phe Phe L 2460	ys Asp
Asp Phe Ile Leu Glu 2465	Val Asp Arg Leu Pro 2470	Asn Glu Thr Ala G 2475	Ely Pro 2480
Glu Thr Gly Glu Ser 248	Leu Ala Asn Asp Phe 249	_	al Cys 2495
Arg Val Glu Thr Gly 2500	Glu Asn Cys Thr Ser 2505	Pro Ala Pro Lys G 2510	Slu Glu
Leu Leu Pro Val Glu 2515	Glu Thr Glu Gln Asp 2520	Lys Glu His Thr C 2525	Cys Glu
	Ile Val Thr Val Leu 2535		Arg Ser
Gly Gly Gly Val Gly 2545	Asp Val Leu Arg Lys 2550		3lu Pro 2560

```
Leu Phe Ala Arq Val Ile Tyr Asp Leu Leu Phe Phe Met Val
                                   2570
               2565
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
                               2585
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
       2595
                           2600
                                               2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
                       2615
                                           2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
                                      2635
                   2630
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
               2645
                                  2650
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
                               2665
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
                          2680
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
                      2695
                                          2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
                  2710
                                      2715
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
              2725
                                  2730
His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
           2740
                               2745
```

<210> 11

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<400> 11

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 20 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 85 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 140 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 180 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu

		105													
57-7	7	195	**- 7	70	<b>~</b>		200	~	_	_		205	_		
	210					215					220		Leu		
Lys 225	Trp	Ser	Asp	Asn	Lys 230	Asp	Asp	Ile	Leu	Lys 235	Gly	Gly	Asp	Val	Val 240
Arg	Leu	Phe	His	Ala 245	Glu	Gln	Glu	Lys	Phe 250	Leu	Thr	Cys	Asp	Glu 255	His
Arg	Lys	Lys	Gln 260	His	Val	Phe	Leu	Arg 265		Thr	Gly	Arg	Gln 270		Ala
Thr	Ser	Ala 275		Ser	Ser	Lys	Ala 280		Trp	Glu	Val	Glu 285	Val	Val	Gln
His	Asp		Cys	Arg	Gly	Gly 295		Gly	Tyr	Trp	Asn 300		Leu	Phe	Arg
Phe 305	Lys	His	Leu	Ala	Thr 310		His	Tyr	Leu	Ala 315		Glu	Val	Asp	Pro 320
	Phe	Glu	Glu	Glu 325		Leu	Glu	Phe	Gln 330		Ser	Val	Asp	Pro	
Gln	Asp	Ala	Ser 340		Ser	Arg	Leu	Arg		Ala	Gln	Glu	Lys 350		Val
Tyr	Ser	Leu 355		Ser	Val	Pro	Glu 360		Asn	Asp	Ile	Ser 365	Ser	Ile	Phe
Glu	Leu 370		Pro	Thr	Thr	Leu 375		Gly	Gly	Asp	Ser 380		Val	Pro	Arg
Asn 385	Ser	Tyr	Val	Arg	Leu 390		His	Leu	Cys	Thr 395		Thr	Trp	Val	His
	Thr	Asn	Ile	Pro 405		Asp	Lys	Glu	Glu 410		Lys	Pro	Val	Met 415	
Lys	Ile	Gly	Thr 420		Pro	Leu	Lys	Glu 425		Lys	Glu	Ala	Phe 430		Ile
Val	Pro	Val 435	Ser	Pro	Ala	Glu	Val 440		Asp	Leu	Asp	Phe 445	Ala	Asn	Asp
Ala	Ser 450	Lys	Val	Leu	Gly	Ser 455		Ala	Gly	Lys	Leu 460		Lys	Gly	Thr
Ile 465	Thr	Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
Val	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
			500					505					Met 510		
		515					520					525	Pro		
	530					535					540		Gly		
545					550					555			Arg		560
				565					570				Ile	575	
			580					585					Leu 590		
		595					600					605	Leu		_
	610					615					620		Val		
Asn 625	Arg	Glu	Pro	Arg	Phe 630	Leu	Asp	Tyr	Leu	Ser 635	Asp	Leu	Cys	Val	Ser 640
Met	Asn	Lys	Ser	Ile 645	Pro	Val	Thr	Gln	Glu 650	Leu	Ile	Cys	Lys	Ala 655	Val
			660					665					Leu 670		
Ser	Arg	Phe 675	Glu	Phe	Glu	Gly	Val 680	Ser	Thr	Gly	Glu	Asn 685	Ala	Leu	Glu

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Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                       695
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
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                                      715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
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                                  730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
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Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
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Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
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                                          780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
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                   790
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
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                                  810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
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Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
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Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
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Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
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Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
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Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
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Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
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Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
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Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
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                                      955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                  970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
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Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
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Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
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                                          1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
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                                      1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
               1045
                                  1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
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           1060
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                          1080
                                             1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
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                                          1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
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                                      1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
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Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
           1140
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Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                          1160 1165
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
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1170	1175	;	1180	
Lys Leu Cys Val 1185	Gln Glu Ser 1190		l Arg Lys Ser 1195	Arg Lys Gln 1200
Gln Gln Arg Leu	Leu Arg Asn 1205	Met Gly Ala		Val Leu Glu 1215
Leu Leu Gln Ile 122	Pro Tyr Glu			
Ile Met Arg Leu 1235	Ala His Glu	Phe Leu Glr 1240	n Asn Phe Cys 124	Ala Gly Asn
Gln Gln Asn Gln 1250		His Lys His		
Pro Gly Ile Leu 1265				Met Asn Asn 1280
Phe Gln Leu Cys		Asn Glu Arg	g Val Val Gln	His Phe Val 1295
His Cys Ile Glu 1300	•	Arg Asn Val	l Gln Tyr Ile	Lys Phe Leu 1310
Gln Thr Ile Val 1315		Gly Lys Phe	e Ile Lys Lys 132	
Met Val Met Ala 1330	Glu Leu Val 1335	_	Glu Asp Val 1340	Leu Val Phe
Tyr Asn Asp Arg 1345	Ala Ser Phe 1350	Gln Thr Leu	ı Ile Gln Met 1355	Met Arg Ser 1360
Glu Arg Asp Arg	Met Asp Glu 1365	Asn Ser Pro		Tyr His Ile 1375
His Leu Val Glu 1380		Val Cys Thi 1385	Glu Gly Lys	Asn Val Tyr 1390
Thr Glu Ile Lys 1395		1400	140	5
Val Val Thr His 1410	Glu Asp Cys · 1415		ı Val Lys Ile 1420	Ala Tyr Ile
Asn Phe Leu Asn 1425	1430		1435	1440
Ile Tyr Thr Ser	1445	145	50	1455
Asp Ile Cys Arg 1460	0	1465		1470
Ser Val Leu Glu 1475		1480	148	5
Thr Phe Phe Ser	1495	•	1500	
Arg Gln Pro Val	1510		1515	1520
His Cys Asn Trp	1525	153	30	1535
Ile Arg Val Leu 154	0	1545		1550
Val Asp Leu Asp 1555		1560	156	5
Ile Val Gln Lys 1570	1575		1580	_
Ala Arg Arg Asp 1585	1590		1595	1600
Ile Glu Arg Leu	1605	161	10	1615
Pro Leu Val Gln 162	0	1625		1630
Pro Glu Leu Leu 1635		1640	164	5
Ser Gly Gly Phe 1650	Ile Cys Lys 1655		s His Thr Lys 1660	Gln Leu Leu

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Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
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Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
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Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
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                              1705
                                                 1710
Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
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                          1720
       1715
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
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                                         1740
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
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                  1750
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
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                                 1770
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
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                             1785
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
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Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
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                                         1820
Lys Val Ala Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
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                                     1835 1840
Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
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Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
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Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
                         1880
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
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Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
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                                     1915
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
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                                 1930
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
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                             1945
                                                1950
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
                          1960
                                             1965
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr
                      1975
                                         1980
Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
                  1990
                                     1995
Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
              2005
                                 2010
Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
                             2025
          2020
Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu
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Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His
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                                         2060
Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu
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                                     2075
Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
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              2085
Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
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                             2105
Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
                          2120
                                             2125
Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
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                                         2140
Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
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Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
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                              2170
Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
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Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
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Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
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                                    2220
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
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Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro
              2245
                              2250
Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu
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                           2265
Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
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Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
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Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
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Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
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Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
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                           2345 2350
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
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His Glu Phe Phe Tyr Ser Leu Leu Phe Asp Leu Val Tyr Arg Glu
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Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
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                                 2395
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
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Ile Val Gly Tyr Leu Phe Phe Lys Asp Phe Ile Leu Glu Val Asp
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Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
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Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
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                 2470
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
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Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
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Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
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Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Val Leu Asn Leu
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                                     2540
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
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Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
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                              2570 2575
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
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Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                      2600 2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
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Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
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                                 2635
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 Met
 Ser
 Leu
 Val
 Ser
 Ser
 Asp
 Ser
 Glu
 Glu
 Glu
 Leu
 Arg
 2655

 Asn
 Leu
 Glu
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 Glu
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 Val
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 Pro
 His
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 Pro
 Asn
 Can
 <210> 12 <211> 2749 <212> PRT <213> Artificial Sequence

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305
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Asp Phe Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
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Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
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                                345
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
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Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
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Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
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                                        395
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu
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Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
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Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
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                                                445
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                        455
                                            460
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
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                                        475
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
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Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
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                                                    510
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
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Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
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Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
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                                        555
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys
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Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
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Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
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His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
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Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
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Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
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                                    650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
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                                665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                            680
                                                685
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                        695
                                            700
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                    710
                                        715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
                725
                                    730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
            740
                                745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                            760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
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                                            780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                                        795
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Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
               805
                                  810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
                              825
           820
                                                 830
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
       835
                          840
                                             845
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                      855
                                         860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
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                                     875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
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Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
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Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                          920
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                      935
                                         940
Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
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                                     955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                  970
              965
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
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                              985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
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                                             1005
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Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
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Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
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Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
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Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
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                                                 1070
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
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Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
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Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
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Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
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Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
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Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
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Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
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Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
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                              1225
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
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                                             1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
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Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
     1270 1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
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His Cys Ile Glu 130		Arg Asn 1309		Ile Lys Phe Leu 1310
Gln Thr Ile Val 1315	Lys Ala Glu	Gly Lys 1320	Phe Ile Lys	Lys Cys Gln Asp 1325
Met Val Met Ala 1330	Glu Leu Val 133		Gly Glu Asp	Val Leu Val Phe O
Tyr Asn Asp Arg 1345	Ala Ser Phe 1350	Gln Thr	Leu Ile Gln 1355	Met Met Arg Ser 1360
	1365		1370	Met Tyr His Ile 1375
138	0	1385	5	Lys Asn Val Tyr 1390
1395		1400		Asp Ile Val Arg 1405
1410	141	5	1420	
		Val Asp		Glu Met Lys Glu
1425 The Tur Thr Ser	1430	Trn Lvg	1435	Asn Phe Leu Val
ric lyr imr ber	1445		1450	1455
Asp Ile Cys Arg	_	Asn Thr 1465		Lys His Ala Asp 1470
Ser Val Leu Glu 1475	Lys Tyr Val	Thr Glu 1480	Ile Val Met	Ser Ile Val Thr 1485
Thr Phe Phe Ser 1490	Ser Pro Phe 149		Gln Ser Thr 150	Thr Leu Gln Thr
1505	1510		1515	Phe Arg Val Tyr 1520
_	1525		1530	Val Glu Ser Cys 1535
154	0	1545	· ·	Ile Ala Ile Pro 1550
1555		1560		Lys Ser His Asn 1565
11e val Gin Lys 1570	Thr Ala Met		Arg Leu Ser	Ala Arg Asn Ala
				Tyr Arg Asn Ile 1600
Ile Glu Arg Leu		Val Ser		Asp Arg Leu Arg 1615
Pro Leu Val Gln 162		Ser Val		Val Leu His Arg 1630
Pro Glu Leu Leu 1635	Phe Pro Glu			Arg Lys Cys Glu 1645
Ser Gly Gly Phe 1650	Ile Cys Lys 165		Lys His Thr	Lys Gln Leu Leu )
Glu Glu Asn Glu 1665	Glu Lys Leu 1670	Cys Ile	Lys Val Leu 1675	Gln Thr Leu Arg 1680
Glu Met Met Thr				
	Lys Asp Arg 1685	Gly Tyr	Gly Glu Lys 1690	Gln Ile Ser Ile 1695
Asp Glu Leu Glu 170	1685 Asn Ala Glu		1690 Gln Pro Pro	
170	1685 Asn Ala Glu 0	Leu Pro	1690 Gln Pro Pro	1695 Glu Ala Glu Asn
170 Ser Thr Glu Glu 1715 His Lys Arg Gly 1730	1685 Asn Ala Glu O Leu Glu Pro Glu Ala Leu 1739	Leu Pro 1705 Ser Pro 1720 Arg Gln	1690 Gln Pro Pro Pro Leu Arg Ile Leu Val	1695 Glu Ala Glu Asn 1710 Gln Leu Glu Asp 1725 Asn Arg Tyr Tyr
170 Ser Thr Glu Glu 1715 His Lys Arg Gly 1730 Gly Asn Ile Arg 1745	1685 Asn Ala Glu 0 Leu Glu Pro Glu Ala Leu 1739 Pro Ser Gly 1750	Leu Pro 1705 Ser Pro 1720 Arg Gln 5 Arg Arg	1690 Gln Pro Pro Pro Leu Arg Ile Leu Val 1740 Glu Asp Leu 1755	1695 Glu Ala Glu Asn 1710 Gln Leu Glu Asp 1725 Asn Arg Tyr Tyr

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                            1785
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
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Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
                     1815
                                      1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
                 1830
                                   1835
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
             1845
                               1850
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Ile Lys Ala
          1860
                 1865
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp
                       1880
                                1885
Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
                    1895
                                      1900
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
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                                  1915
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
             1925
                              1930
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
                 1945 1950
         1940
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
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                                         1965
Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln
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                                     1980
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
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                                  1995
Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
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                               2010
Leu Gly Leu Cly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
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Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
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Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
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                                      2060
Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
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Met Asp Leu Val Leu Glu Leu Lys Asn Ala Ser Lys Leu Leu Leu
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Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
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Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr
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Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly
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Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly
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Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr
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Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val
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Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu
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Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
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                                  2235
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln
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                   2250
Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met
```

	2260	)				2265	;				2270	)	
Ser Phe Trp 227		Ser :	Ile		Phe 2280		Leu	Ala	Val	Leu 2285		Asn	Leu
Leu Val Ala 2290	Phe	Phe '		Pro 2295		Lys	Gly	Val	Arg 2300		Gly	Thr	Leu
Glu Pro His 2305	Trp		Gly 2310		Leu	Trp	Thr	Ala 2315		Leu	Ile	Ser	Leu 2320
Ala Ile Val	Ile	Ala 1 2325		Pro	Lys	Pro	His 2330		Ile	Arg	Ala	Leu 2335	
Ala Ser Thr	Ile 2340		Arg	Leu	Ile	Phe 2345		Val	Gly	Leu	Gln 2350		Thr
Leu Phe Leu 235		Gly A	Ala		Asn 2360		Cys	Asn	Lys	Ile 2365		Phe	Leu
Met Ser Phe 2370				2375	-				2380	)	_		
Met Val Leu 2385	•	:	2390					2395	,				2400
Cys Ala Met		2405					2410	)	_			2415	5
Phe Asp Leu	2420	· _	$\Lambda^{-}$			2425	5				2430	)	
Val Thr Arg 243	5				2440	)				2445	5		
Ile Leu Val				2455					2460	)			
Asp Phe Ile 2465		:	2470					2475					2480
Glu Thr Gly		2485					24.90	)				2495	5
Arg Val Glu	2500	ı				2505	5				2510	)	
Leu Leu Pro 251	5				2520	٠				2525	5		
Thr Leu Leu 2530		_		2535					2540	)			
		Cl			110011	Arg	ьys			пув	GIU		
Gly Gly Gly 2545		:	2550			Λαn		2555		Dhe	Dhe		2560
2545 Leu Phe Ala	Ala	2565	2550 Val	Ile	Tyr	_	Leu 2570	Leu	Phe			Met 2575	2560 Val
2545 Leu Phe Ala Ile Ile Ile	Ala Val 2580	Arg V 2565 Leu <i>i</i>	2550 Val Asn	Ile Leu	Tyr Ile	Phe 2585	Leu 2570 Gly	Leu Val	Phe Ile	Ile	Asp 2590	Met 2575 Thr	2560 Val Phe
Leu Phe Ala Ile Ile Ile Ala Asp Leu 259	Ala Val 2580 Arg	Arg V 2565 Leu A	2550 Val Asn Glu	Ile Leu Lys	Tyr Ile Gln 2600	Phe 2585 Lys	Leu 2570 Gly Lys	Leu Val Glu	Phe Ile Glu	Ile Ile 2605	Asp 2590 Leu	Met 2575 Thr ) Lys	2560 Val Phe Thr
Leu Phe Ala Ile Ile Ile Ala Asp Leu 259 Thr Cys Phe 2610	Ala Val 2580 Arg 5 Ile	Arg V 2565 Leu A Ser (	2550 Val Asn Glu Gly	Ile Leu Lys Leu 2615	Tyr Ile Gln 2600 Glu	Phe 2585 Lys Arg	Leu 2570 Gly Lys Asp	Leu Val Glu Lys	Phe Ile Glu Phe 2620	Ile Ile 2605 Asp	Asp 2590 Leu S	Met 2575 Thr ) Lys Lys	2560 Val Phe Thr
Leu Phe Ala  Ile Ile Ile  Ala Asp Leu 259  Thr Cys Phe 2610  Val Thr Phe 2625	Val 2580 Arg 5 Ile Glu	Arg 1 2565 Leu 2 Ser ( Cys (	2550 Val Asn Glu Gly His 2630	Ile Leu Lys Leu 2615 Ile	Tyr Ile Gln 2600 Glu Lys	Phe 2585 Lys Arg	Leu 2570 Gly Lys Asp	Val Glu Lys His 2635	Phe Ile Glu Phe 2620 Asn	Ile Ile 2605 Asp Met	Asp 2590 Leu Asn Trp	Met 2575 Thr ) Lys Lys Lys	2560 Val Phe Thr Thr
Leu Phe Ala  Ile Ile Ile  Ala Asp Leu 259  Thr Cys Phe 2610  Val Thr Phe 2625  Leu Cys Phe	Val 2580 Arg Ile Glu	Arg N 2565 Leu A Ser ( Cys ( Glu I Val 1 2645	2550 Val Asn Glu Gly His 2630 Leu	Ile Leu Lys Leu 2615 Ile Val	Tyr Ile Gln 2600 Glu Lys Lys	Phe 2585 Lys Arg Glu Val	Leu 2570 Gly Lys Asp Glu Lys 2650	Val Glu Lys His 2635 Asp	Phe Ile Glu Phe 2620 Asn Ser	Ile Ile 2605 Asp Met	Asp 2590 Leu Asn Trp Glu	Met 2575 Thr ) Lys Lys His	2560 Val Phe Thr Thr Tyr 2640 Thr
Leu Phe Ala  Ile Ile Ile  Ala Asp Leu 259  Thr Cys Phe 2610  Val Thr Phe 2625	Val 2580 Arg 5 Ile Glu Ile Ser 2660	Arg N 2565 Leu A Ser ( Cys ( Glu I Val 1 2645 Tyr N	2550 Val Asn Glu Gly His 2630 Leu	Ile Leu Lys Leu 2615 Ile Val Ala	Tyr Ile Gln 2600 Glu Lys Lys Glu	Phe 2585 Lys Arg Glu Val Met 2665	Leu 2570 Gly Lys Asp Glu Lys 2650 Ile	Leu Val Glu Lys His 2635 Asp	Phe Ile Glu Phe 2620 Asn Ser Glu	Ile Ile 2605 Asp Met Thr	Asp 2590 Leu Asn Trp Glu Asn 2670	Met 2575 Thr ) Lys Lys His Tyr 2655 Leu	2560 Val Phe Thr Thr Tyr 2640 Thr Asp
Leu Phe Ala  Ile Ile Ile  Ala Asp Leu 259  Thr Cys Phe 2610  Val Thr Phe 2625  Leu Cys Phe Gly Pro Glu  Trp Phe Pro 267	Val 2580 Arg 5 Ile Glu Ile Ser 2660 Arg	Arg V 2565 Leu A Ser ( Cys ( Glu I 2645 Tyr V	2550 Val Asn Glu Gly His 2630 Leu Val	Ile Leu Lys Leu 2615 Ile Val Ala	Tyr Ile Gln 2600 Glu Lys Lys Glu Met 2680	Phe 2585 Lys Arg Glu Val Met 2665 Ser	Leu 2570 Gly Lys Asp Glu Lys 2650 Ile	Val Glu Lys His 2635 Asp Arg	Phe Ile Glu Phe 2620 Asn Ser Glu Ser	Ile 2605 Asp Met Thr Arg Ser 2685	Asp 2590 Leu Asn Trp Glu Asn 2670 Asp	Met 2575 Thr ) Lys Lys His Tyr 2655 Leu )	2560 Val Phe Thr Thr 2640 Thr Asp
Leu Phe Ala  Ile Ile Ile  Ala Asp Leu 259  Thr Cys Phe 2610  Val Thr Phe 2625  Leu Cys Phe Gly Pro Glu  Trp Phe Pro	Val 2580 Arg 5 Ile Glu Ile Ser 2660 Arg 5	Arg N 2565 Leu 2 Ser C Cys C Glu 1 2645 Tyr N Met 2	2550 Val Asn Glu Gly His 2630 Leu Val Arg	Ile Leu Lys Leu 2615 Ile Val Ala Ala Arg 2695	Tyr Ile Gln 2600 Glu Lys Lys Glu Met 2680 Asn	Phe 2585 Lys Arg Glu Val Met 2665 Ser	Leu 2570 Gly Lys Asp Glu Lys 2650 Ile Leu	Val Glu Lys His 2635 Asp Arg Val	Phe Ile Glu Phe 2620 Asn Ser Glu Ser Lys 2700	Ile 2605 Asp Met Thr Arg Ser 2685 Leu	Asp 2590 Leu Asn Trp Glu Asn 2670 Asp	Met 2575 Thr ) Lys Lys His Tyr 2655 Leu ) Ser	2560 Val Phe Thr Thr 2640 Thr Asp Glu
Leu Phe Ala  Ile Ile Ile  Ala Asp Leu 259  Thr Cys Phe 2610  Val Thr Phe 2625  Leu Cys Phe Gly Pro Glu  Trp Phe Pro 267 Gly Glu Gln 2690	Val 2580 Arg 5 Ile Glu Ile Ser 2660 Arg 5 Asn	Arg N 2565 Leu A Ser (Cys (Cys (Cys (Cys (Cys (Cys (Cys (Cys	2550 Val Asn Glu Gly His 2630 Leu Val Arg Leu Asn 2710	Ile Leu Lys Leu 2615 Ile Val Ala Ala Arg 2695 Leu	Tyr Ile Gln 2600 Glu Lys Lys Glu Met 2680 Asn	Phe 2585 Lys Arg Glu Val Met 2665 Ser Leu	Leu 2570 Gly Lys Asp Glu Lys 2650 Ile Leu Gln	Val Glu Lys His 2635 Asp Val Glu Leu 2715	Phe Ile Glu Phe 2620 Asn Ser Glu Ser Lys 2700 Ser	Ile 2605 Asp Met Thr Arg Ser 2685 Leu Glu	Asp 2590 Leu Asn Trp Glu Asn 2670 Asp Glu Leu	Met 2575 Thr Lys Lys His Tyr 2655 Leu Ser Ser	2560 Val Phe Thr Thr Tyr 2640 Thr Asp Glu Thr Asp 2720
Leu Phe Ala  Ile Ile Ile  Ala Asp Leu 259  Thr Cys Phe 2610  Val Thr Phe 2625  Leu Cys Phe  Gly Pro Glu  Trp Phe Pro 267  Gly Glu Gln 2690  Met Lys Leu 2705	Val 2580 Arg 5 Ile Glu Ile Ser 2660 Arg 5 Asn Val Glu	Arg N 2565 Leu A Ser ( Cys ( Glu I 2645 Tyr N Met A Glu I Thr A 3725 Met A	2550 Val Asn Glu Gly His 2630 Leu Val Arg Leu Asn 2710 Arg	Ile Leu Lys Leu 2615 Ile Val Ala Ala Arg 2695 Leu Lys	Tyr Ile Gln 2600 Glu Lys Lys Glu Met 2680 Asn Ser	Phe 2585 Lys Arg Glu Val Met 2665 Ser Leu Gly	Leu 2570 Gly Lys Asp Glu Lys 2650 Ile Gln Gln Gln 2730 Gln	Val Glu Lys His 2635 Asp Val Glu Leu 2715 Arg	Phe Ile Glu Phe 2620 Asn Ser Glu Ser Lys 2700 Ser Ile	Ile Ile 2605 Asp Met Thr Arg Ser 2685 Leu Glu Gly	Asp 2590 Leu Asn Trp Glu Asn 2670 Asp Glu Leu	Met 2575 Thr Lys Lys His Tyr 2655 Leu Ser Ser	2560 Val Phe Thr Thr Tyr 2640 Thr Asp Glu Thr Asp 2720 Gly

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<223> Description of Artificial Sequence:/note =
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                                25
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
                            40
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
                                            60
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
                                        75
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
                                    90
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
                                105
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
                            120
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                        135
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
                    150
                                        155
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
                                    170
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
                                185
            180
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
                            200
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                       215
                                            220
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
                   230
                                        235
Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His
                                    250
                245
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
            260
                                265
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
                            280
                                                285
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
                                            300
                        295
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
                    310
                                        315
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
                325
                                    330
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
                                345
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
                        375
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
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385
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Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu
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Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
            420
                                425
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
                            440
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                        455
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
                    470
                                         475
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
                485
                                    490
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
            500
                                505
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
                          · 520
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
    530
                        535
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
                    550
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys
                                    570
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
            580
                                585
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
        595
                            600
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                    630
                                       635
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
                                    650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
                                665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                            680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                        695
                                            700
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                    710
                                        715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
                                    730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
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Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                            760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
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                                            780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                    790
                                        795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
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Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
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                                825
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                            840
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
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                                            860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
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                                        875
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Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
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Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
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Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                        920
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                    935
                                     940
Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                                  955
                950
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
            965
                              970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
         980
                           985
                                           990
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
                      1000
                                        1005
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
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                   1015
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
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Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
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                              1050 1055
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
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                          1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                       1080 1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
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                                     1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
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                                 1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
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                              1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
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                          1145
                                            1150
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
      1155
                       1160
                                        1165
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
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                    1175
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
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Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
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Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
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Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
      1235 1240 1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
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Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
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Phe Gln Leu Cys Ser Glu Ile Asn Glu Arq Val Val Gln His Phe Val
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His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
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          1300
                                <sub>.</sub> 1310
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
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      1315
                               1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
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   1330
         1335
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
1345 1350 1355 1360
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
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Thr	Glu	Ile 1399		Cys	Asn	Ser	Leu 140		Pro	Leu	Asp	Asp 140!		Val	Arg
Val	Val 1410		His	Glu	Asp	Cys 1419		Pro	Glu	Val	Lys 1420		Ala	Tyr	Ile
Asn 142	Phe 5	Leu	Asn	His	Cys 1430	_	Val	Asp	Thr	Glu 1435		Glu	Met	Lys	Glu 1440
Ile	Tyr	Thr	Ser	Asn 144		Met	Trp	Lys	Leu 1450	Phe		Asn	Phe	Leu 1459	
Asp	Ile	Сув	Arg 1460		Суѕ	Asn	Asn	Thr 146		Asp	Arg	Lys	His 1470		Asp
Ser	Val	Leu 147		Lys	Tyr	Val	Thr 1480		Ile	Val	Met	Ser 148		Val	Thr
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	Cys	Asn	Trp	Leu 1529	Met		Ser	Gln	Lys 1530	Ala		Val	Glu	Ser 1535	Cys
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Val	Asp	Leu 1559		Ser	Gln	Val	Asn 1560	Asn		Phe	Leu	Lys 1569		His	Asn
Ile	Val 1570		Lys	Thr	Ala	Met 1579		Trp	Arg	Leu	Ser 1580		Arg	Asn	Ala
Ala 158	Arg	Arg	Asp	Asp	Val 1590		Ala			Arg 1595		Tyr	Arg	Asn	Ile 1600
Ile	Glu	Arg	Leu <sup>.</sup>	Gln 1609	_	Ile	Val	Ser	Ala 1610		Glu	Asp	Arg	Leu 1615	_
Pro	Leu	Val	Gln 1620	Ala		Leu	Ser	Val 1629	Leu		Asp	Val	Leu 1630	His	
Pro	Glu	Leu 1635		Phe	Pro	Glu	Asn 1640		Asp	Ala	Arg	Arg 1649	-	Cys	Glu
Ser	Gly 1650		Phe	Ile	Cys	Lys 1655		Ile	Lys	His	Thr 1660		Gln	Leu	Leu
Glu 1669	Glu 5	Asn	Glu	Glu	Lys 1670		Cys	Ile	Lys	Val 1675		Gln	Thr	Leu	Arg 1680
Glu	Met	Met	Thr	Lys 1689		Arg	Gly	Tyr	Gly 1690		Lys	Gly	Glu	Ala 1695	
Arg	Gln	Ile	Leu 1700		Asn	Arg	Tyr	Tyr 1709		Asn	Ile	Arg	Pro 1710	Ser	Gly
Arg	Arg	Glu 1719		Leu	Thr	Ser	Phe 1720		Asn	Gly	Pro	Leu 1725	Ser		Gly
Gly	Pro 1730	Ser		Pro	Gly	Gly 1739	Gly		Gly	Gly	Pro 1740	Gly		Gly	Ser
Thr 1749	Ser	Arg	Gly	Glu	Met 1750		Leu	Ala	Glu	Val 1755		Cys	His	Leu	Asp 1760
	Glu	Gly	Ala	Ser 1769	Asn		Val	Ile	Asp 1770	Leu		Met	Asn	Ala 1775	Ser
Ser	Asp	Arg	Val 1780		His	Glu	Ser	Ile 1789	Leu		Ala	Ile	Ala 1790	Leu	
Glu	Gly	Gly 1795		Thr	Thr	Ile	Gln 1800		Ser	Phe	Phe	Cys 1809	_	Leu	Thr
Glu	Asp 1810	Lys		Ser	Glu	Lys 1819	Phe		Lys	Val	Phe 1820	Tyr		Arg	Met
Lys 1829	Val		Gln	Gln	Glu 1830	Ile		Ala	Thr	Val 1835	Thr		Asn	Thr	Ser 1840
	Leu	Gly	Asn	Lys 1845	Lys		Asp	Asp	Glu 1850	Val		Arg	Asp	Ala 1855	Pro

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                         1865
Arq Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
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              1880
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Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
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                          1900
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
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Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu.
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Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
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Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
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                                     1965
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr
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Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
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Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu
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Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
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Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
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Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
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Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
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Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
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Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
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Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
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Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
                      2200
                             2205
Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
                   2215
                                  2220
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
               2230 2235
Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro
            2245
                 2250
Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu
        2260
               2265
                                         2270
Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
 2275 2280
                           2285
Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
                  2295
                                  2300
Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
    2310 2315 2320
Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
            2325 2330 2335
Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
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2340
                               2345
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
                           2360
                                               2365
His Glu Phe Phe Tyr Ser Leu Leu Phe Asp Leu Val Tyr Arg Glu
                       2375
                                           2380
Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
                   2390
                                       2395
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
               2405
                                   2410
Ile Val Gly Tyr Leu Phe Phe Lys Asp Phe Ile Leu Glu Val Asp
           2420
                               2425
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
       2435 2440
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
                       2455
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
                   2470
                                       2475
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
                                   2490
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Val Gly Asp Val
           2500
                               2505
                                                  2510
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
                           2520
                                              2525
Tyr Asp Leu Leu Phe Phe Met Val Ile Ile Val Leu Asn Leu
                       2535
                                           2540
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
                   2550
                                       2555
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
               2565
                                   25.70
                                                      2575
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
           2580
                               2585
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                           2600
                                              2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
                       2615
                                           2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
                   2630
                                       2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
               2645
                                   2650
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
                               2665
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
                           2680
                                              2685
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
                       2695
                                           2700
Asn Pro Gln Gln Pro Ala
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Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
                   70
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
                                   90
               85
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
           100
                               105
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
                                               125
                           120
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                       135
                                           140
Asn Ala Met Arq Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
                                 . 155
                   150
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
               165
                                   170
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
                               185
                                                   190
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
                           200
                                               205
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                                           220
                       215
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
                                    · 235
                   230
Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His
                                    250
                245
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
                               265
            260
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
                            280
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
                                            300
                        295
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
                    310
                                        315
Asp Phe Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
                                    330
                325
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
                                345
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
                            360
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
                        375
                                            380
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
                                        395
                    390
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu
                405
                                    410
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
                                425
                                                    430
            420
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
                            440
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                        455
                                            460
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
                                        475
                    470
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
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                485
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
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505
            500
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
                           520
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Leu Gly Asp Gln
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    530
                       535
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
                   550
                                      555
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys
                                   570
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
                               585
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
                           600
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
                       615
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                   630
                                       635
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
                645
                                   650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
            660
                               665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                           680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                                           700
                       695
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                   710
                                       715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
                                   730 . 735
                725
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
                               745
            740
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                                •
                                               765
                           760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                       775
                                           780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                    790
                                       795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
               805
                                   810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
           820
                               825
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
        835
                           840
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                       855
                                           860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
        870
                                       875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
               885
                                   890
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
            900
                               905
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                            920
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                        935
Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                    950
                                        955
.Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                965
                                   970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
                                985
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Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser 1000 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile 1030 1035 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly 1050 1045 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr 1065 1060 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser 1080 1085 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val 1095 1100 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp 1110 1115 1120 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly 1125 1130 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His 1140 1145 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr 1155 1160 1165 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser 1175 1180 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln 1190 1195 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu 1210 1205 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu 1220 1225 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn 1240 1245 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn 1260 1255 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn 1270 1275 1280 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val 1290 1285 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu 1305 1310 1300 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp 1320 1325 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe 1340 1335 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser 1345 1350 1355 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile 1365 1370 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr 1380 1385 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg 1400 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile 1415 1420 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu 1430 1435 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val 1445 1450 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp 1465

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Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
                         1480
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
                      1495
                                        1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
                 1510
                                    1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
             1525
                                1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
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          1540
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
               1560
                                 1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                     1575
                                       1580
Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
                1590
                                    1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
              1605
                                1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
          1620
                            1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
                        1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
                    1655
                                       1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                 1670
                                   1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
              1685
                                1690
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
          1700
                            1705
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
                         1720
                                           1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
                     1735
                                       1740
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Glu Leu Thr Ser Phe Gly
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                                   1755
Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly
                                1770
              1765
Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
          1780
                            1785
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
                        1800
                                           1805
Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
                     1815
                                        1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
                 1830
                                    1835
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
              1845
                                1850
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Ile Lys Ala
                            1865
          1860
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp
                         1880 1885
Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
                     1895
                                        1900
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
                 1910
                                    1915
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
              1925
                                1930
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
    1940
                             1945
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
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Leu Arg Phe Leu Gln Leu Cuy Glu Asn His Asn Arg Asp Leu Gln 1970	1955		1960		1965
1985	Leu Arg Phe Leu	Gln Leu Leu	Cys Glu		Arg Asp Leu Gln
2005	_	_	Asn Lys		_
Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His 2035 2045 2045 2045 2045 2045 2055 2055 205		_	-	-	
2015   2040   2045   2050   2050   2055   2050   2055   2060   2055   2060   2055   2060   2055   2060   2055   2060   2075   2080   2065   2070   2075   2080   2085   2075   2080   2085   2080   2095   2080   2085   2090   2095   2080   2095   2080   2080   2095   2080   2095   2080   2095   2080   2095   2080   2080   2095   2080   2095   2080   2095   2080   2095   2080   2080   2095   2080					
2050   2055   2060   2075   2080   2065   2070   2075   2080   2075   2080   2075   2080   2080   2080   2095		Glu Ser Leu		Tyr Cys Gln	
Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu 2085		_			-
Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu 2100	2065	2070		2075	2080
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Glu Lys Lys Ala Tyr 2115 2120 2125  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130 2135  Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130 2140  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2150 2155 2160  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2165 2170 2175  Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 2180 2200 2205  Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu 2210 2215 2220  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2225 2225  Asp Phe Phe Leu Arg Ser Glu Asp Leu Tyr Trp Cys Ala Arg Asn Met 2265  Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2220 2255  Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2220 2255  Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2230 2225  Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu He Asn Leu 2230 2235  Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2335  Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340 2335  Met Ser Phe Val Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355  Met Ser Phe Val Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355  Met Ser Phe Val Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu Leu Tyr Lys Gly Tyr Arg Ala 2370 2375  Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2355  Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2355  Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2355  Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2360  Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu 2415  Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Leu Leu Tyr Leu Leu Ile 2400  Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Leu Leu Leu 2415	• .	2085		2090	2095
Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly 2130 2135 2140  Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His 2145 2150 2150 2155 2160  Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly 2170 2175  Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr 2180 2180 2215 2200  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2190  Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val 2210  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Leu 2210  Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2225 2230  Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln 2255  Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met 2205  Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2290  Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2290  Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2305  Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2325  Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340  Asp Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355  Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2340  Asp Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355  Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala 2370  Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385  Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Ile 2385  Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Ile 2385  Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Ile 2385  Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu 2405  Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420  Yal Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile 2405	2100		2105		2110
2130	. 2115	Λ	2120		2125
2145					
Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr			Gly His		
Ala Gln   Ile Glu   Ile Val   Arg   Leu   Asp   Arg   Thr Met   Glu   Glu   Glu   Ile Val   2195   2200   2205	_	_			
Pro   Val   Pro   Ser   Ile   Cys   Glu   Phe   Leu   Thr   Lys   Glu   Ser   Lys   Leu   2210   2215   2220   2220	•. 2180		2185		2190
Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn 2225	. 2195		2200		2205
2225.	2210	2219	5	222	0
1	2225	2230		2235	2240
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu 2285  Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2295  Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2305  Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile Ser Leu 2305  Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr 2345  Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu 2355  Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala Leu Ile 2375  Met Val Leu Arg Ile Leu Tyr Phe Leu Tyr Phe Thr Arg Gly Tyr Arg Ala Leu Ile 2385  Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala Leu Ile 2385  Met Val Leu Arg Ile Ile Phe Leu Tyr Phe Thr Arg Gly Tyr Arg Ala Leu Ile 2385  Met Val Asp Val Gly Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile 2385  Met Val Asp Val Gly Phe Val His Gly Phe Phe Tyr Ser Leu Leu Leu 1240  Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu Leu 2405  Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2425  Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu Du Val Leu Leu 2425		2245		2250	2255
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu 2295	2260		2265		2270
Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu 2305	2275		2280		2285
2305	2290	2295	5	230	0
Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile 2325	_	<del>-</del>	red IIb		
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu $2355$		Ala Leu Pro	_	His Gly Ile	Arg Ala Leu Ile
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Gly Ala Phe		Cys Asn Lys	
2385 2390 2395 2400  Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu 2405 2410 2415  Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420 2425 2430  Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu	2370	2379	5	238	0
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser 2420 2425 2430  Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu	-		Leu Tyr		•
2420 2425 2430 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu	_			-	
	2420		2425		2430
		Gly Arg Pro		Leu Thr Ala	

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Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
                      2455
   2450
                                          2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
                   2470
                                      2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
                                  2490
               2485
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
           2500
                              2505
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
       2515
                          2520
                                             2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
                      2535
                                         2540
Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
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                                     2555
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val
                                 2570
              2565
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
           2580
                             2585
                                                 2590
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
                         2600
                                             2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
                     2615
                                         2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
                  2630
                                     2635
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
              2645
                                 2650
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
          2660
                             2665
                                                2670
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
                         2680
                                   2685
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
                     2695
                                         2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
                  2710
                                     2715
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
                                 2730
His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
           2740
                              2745
```

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<210> 15
<211> 2710
<212> PRT
<213> Artificial Sequence
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<223> Description of Artificial Sequence:/note =
 synthetic construct

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Thr	Val	Ile 115	Gln	Tyr	Gly	Asn	Val 120	Ile	Gln	Leu	Leu	His 125	Leu	Lys	Ser
Asn	Lys 130	Tyr	Leu	Thr	Val	Asn 135	Lys	Arg	Leu	Pro	Ala 140	Leu	Leu	Glu	Lys
Asn 145	Ala	Met	Arg	Val	Thr 150	Leu	Asp	Glu	Ala	Gly 155	Asn	Glu	Gly	Ser	Trp 160
Phe	Tyr	Ile	Gln	Pro 165	Phe	Tyr	Lys	Leu	Arg 170	Ser	Ile	Gly	Asp	Ser 175	Val
		_	Asp 180	_				185					190		
		195	Ser				200					205			
	210		Val			215					220				
225			Asp		230					235					240
_			His Gln	245				-	250				_	255	
			260 Thr					265					270		
		275	Cys			_	280		_			285			
	290		Leu			295					300				
305			Glu		310					315					320
				325	_		•		330				_	335	_
	_		Ser 340	_				345					350		
		355	Val				360					365			
	370		Pro			375					380				
385		_	Val		390.				_	395			_		400
			Ile	405		_	_		410		_			415	
			Thr 420					425					430		
		435					440					445			Asp
	450	_				455			_		460			_	Thr
Ile 465	Thr	Gln	Asn	Glu	Arg 470	Arg	Ser	Val	Thr	Lys 475	Leu	Leu	Glu	Asp	Leu 480
Val	Tyr	Phe	Val	Thr 485	Gly	Gly	Thr	Asn	Ser 490	Gly	Gln	Asp	Val	Leu 495	Glu
			500					505			_		510		Glu
		515					520	=				525			Thr
	530			-		535					540				Gln
545					550					555					Leu 560
Arg	His	Ser	Gln	Gln 565	Asp	Tyr	Arg	Lys	Asn 570	Gln	Glu	Tyr	Ile	Ala 575	Lys

```
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
                               585
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
                       615
                                           620
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                   630
                                       635
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
               645
                                   650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
                               665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                           680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                                           700
                       695
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                   710
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
                                   730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
                               745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                           760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                       775
                                           780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                   790
                                       795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
                                   810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
                               825
           820
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                           840
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                       855
                                           860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
                   870
                                       875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
                                   890
               885
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
           900
                               905
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                           920
                                               925
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                       935
                                           940
Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                   950
                                       955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                   970
               965
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
           980
                               985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
                           1000
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
                       1015
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                   1030
                                       1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
                            1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
```

```
1060
                          1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
      1075
                       1080
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
                    1095
                                     1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
                 1110
                                  1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
             1125
                               1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
          1140
                          1145
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                        1160 . 1165
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
                    1175
                                     1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
                 1190
                                  1195
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
             1205
                               1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
                           1225 1230
          1220
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
                        1240
                                         1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
                    1255
                                     1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
                 1270 1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
                               1290
             1285
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
                          1305
          1300
                                            1310
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
                       1320
                               1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
                    1335
                                     1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
1345 1350 1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
             1365 1370 1375
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
                          1385 1390
          1380
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arq
              1400 1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
                   1415 1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
                1430 1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
             1445
                             1450
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
                          1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
                        1480
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
                    1495
                                     1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
                1510
                                 1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
            1525
                              1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
          1540
                           1545
```

```
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
                      1560
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                                   1580
                   1575
Ala Arq Arq Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
                         1595
               1590
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
                             1610
            1605
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
         1620
                         1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
             1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
          1655
                                    1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                                1675
       1670
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
                             1690
           1685
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
                 1705
         1700
Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
             1720
                                       1725
      1715
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
                                    1740
          1735
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
                       1755
       1750
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
             1765 1770
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
                                          1790
                1785
         1780
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
      1795 1800
                             1805
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
                                    1820
        1815
Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
                1830 1835 1840
Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
             1845
                             1850
Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
                                 1870
                1865
Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
                      1880
                                       1885
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
                   1895
                                    1900
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
                1910
                     1915
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
             1925
                             1930
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
         1940
                          1945
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
                      1960
      1955
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr
         1975
                                    1980
Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
      1990 1995
Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
             2005 2010
Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
          2020
                          2025 2030
Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu
```

	2035				2040	)				2049	5		
Lys Asn 205		a Ser	Lys	Leu 205		Leu	Ala	Ile	Met 2060		Ser	Arg	His
Asp Ser	Glu As	n Ala			Ile	Leu	Tyr			Arg	Pro	Lys	
2065 Leu Val	Glu Va	1 110	2070		ת דת	Tr 220	Mot	2079		<b>C</b> 1	77-7	<b>al.</b> ,	2080 Dha
		208	5				2090	0				2099	5
Glu Asp	21	00				2109	5				2110	)	
Gly His	2115				2120	)				2125	5		
. Glu Leu 213	0			213	5	_	_		2140	) _	_	_	
Ala Leu 2145	Glu Ph	e Tyr	Ala 2150		His	Thr	Ala	Gln 2155		Glu	Ile	Val	Arg 2160
Leu Asp	Arg Th	r Met 216		Gln	Ile	Val	Phe 2170		Val	Pro	Ser	Ile 2175	
Glu Phe	Leu Th		Glu	Ser	Lys	Leu 2185		Ile	Tyr	Tyr	Thr 2190		Glu
Arg Asp	Glu Gl 2195	n Gly	Ser	Lys	Ile 2200		Asp	Phe	Phe	Leu 2205		Ser	Glu
Asp Leu 221		n Glu	Met	Asn 2215		Gln	Lys	Lys	Leu 2220		Ala	Gln	Pro
Val Leu 2225	Tyr Tr	p Cys	Ala 2230		Asn	Met	Ser	Phe 2235		Ser	Ser	Ile	Ser 2240
Phe Asn	Leu Al	a Val			Asn	Leu	Leu			Phe	Phe	Tyr	
Phe Lys	Gly Va	2245		Glv	Thr	I.611	2250		Wie	Tren	Car	2255	
Leu Trp	22	60				2265	5			-	2270	)	
	2275				2280	)				2285	5		
Lys Pro	0			2295	5				2300	)			
Ile Phe 2305			2310	)				2315	5				2320
Asn Val		2325	5				2330	)			_	2335	
Gly Thr	23	40				2345	;			_	2350	)	
Leu Tyr	2355				2360	)				2365			
His Glu 237	0			2375	5				2380	)			
Glu Thr	Leu Le	u Asn			Lys	Ser	Val			Asn	Gly	Arg	
2385 Ile Ile	Leu Th	r Ala	2390 Ala		Δla	Len	Tle	2395		Tyr	Len	Dhe	2400 Ser
Ile Val		2405	5				2410	)				2415	
	24	20				2425	5				2430	,	_
Arg Leu	2435				2440	)			_	2445			
Asn Asp 2450	כ			2455	5		_		2460	1	_		
Cys Thr	Ser Pr	o Ala			Glu	Glu	Leu			Val	Glu	Glu	
2465 Glu Gln	Asp Lv	s Glu	2470		Cvs	Glu	Thr	2475		Met	Cvc	Tla	2480
Thr Val		2485	5				2490	)				2495	
	25	00				2505	;				2510		
Leu Arg	2515	J ser	пàг	GIU	G1u 2520		ьeu	rne	ита	A1a 2525	_	vaı	тте

```
Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Val Leu Asn Leu
    2530
                       2535
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
                   2550
                                        2555
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
                2565
                                   2570
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
            2580
                                2585
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                           2600
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
                       2615
                                           2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
                   2630
                                       2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
               2645
                                   2650
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
                               2665
           2660
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
                           2680
                                               2685
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
                       2695
                                           2700
Asn Pro Gln Gln Pro Ala
                   2710
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<210> 16

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<400> 16

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 20 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 45 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 60 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 75 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 85 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 100 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 130 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 185 190 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu

```
200
                                                205
       195
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                                           220
                       215
Lys Trp Ser Asp Asp Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
                  230
                                       235
Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His
                                   250
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
                               265
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
                           280
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
                                           300
                       295
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
                   310
                                        315
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
                                   330
               325
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
           340
                               345
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
                           360
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
                       375
                                           380
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
                   390
                                       395
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu
               405
                                    410
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
            420
                               425
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
                            440
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                       455
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
                   470
                                        475
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
                                   490
               485
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
                                505
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
                            520
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Leu Gly Asp Gln
                       535
                                            540
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
                   550
                                       555
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys
                                  570
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
            580
                                585
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
                            600
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
                       615
                                            620
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                   630
                                       635
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
               645
                                    650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
                               665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                            680
```

```
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                       695
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                                      715
                   710
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
              725
                                  730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
                              745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                          760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                      775
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                   790
                                      795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
                                   810
              805
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
           820
                              825
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                          840
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                      855
                                          860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
                  870
                                      875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
              885
                                  890
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
                               905
           900
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                          920
                                              925
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                      935
                                          940
Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                  950
                                      955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                  970
              965
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
          980
                              985
                                                  990
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
                          1000
                                              1005
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
                       1015
                                          1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                   1030
                                      1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp His Gly
               1045
                                  1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
                               1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                           1080
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
                      1095
                                           1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
                                      1115
                   1110
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
                                   1130
               1125
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
                              1145
                                                  1150
           1140
Lys Lys Thr Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                          1160
                                              1165
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
```

1170	1175		1180	
Lys Leu Cys Val 1185	Gln Glu Ser A		Arg Lys Ser 1195	Arg Lys Gln 1200
Gln Gln Arg Leu		et Gly Ala F 1210	His Ala Val	
Leu Leu Gln Ile 1220	Pro Tyr Glu L		Asp Thr Lys	
Ile Met Arg Leu 1235	Ala His Glu P		Asn Phe Cys 1245	Ala Gly Asn
Gln Gln Asn Gln 1250				
Pro Gly Ile Leu				Met Asn Asn 1280
Phe Gln Leu Cys				
His Cys Ile Glu 1300	Thr His Gly A		Gln Tyr Ile	
Gln Thr Ile Val	Lys Ala Glu G		Ile Lys Lys 1329	Cys Gln Asp
Met Val Met Ala 1330			Glu Asp Val 1340	Leu Val Phe
Tyr Asn Asp Arg				Met Arg Ser 1360
Glu Arg Asp Arg				
His Leu Val Glu 1380			Glu Gly Lys	Asn Val Tyr 1390
Thr Glu Ile Lys 1395		eu Leu Pro 1 400	Leu Asp Asp 1409	
Val Val Thr His 1410	Glu Asp Cys I 1415	le Pro Glu V	Val Lys Ile 1420	Ala Tyr Ile
Asn Phe Leu Asn 1425	His Cys Tyr V		Glu Val Glu 1435	Met Lys Glu 1440
Ile Tyr Thr Ser	Asn His Met T	rp Lys Leu 1 1450	Phe Glu Asn	Phe Leu Val 1455
Asp Ile Cys Arg	_	sn Thr Ser A	Asp Arg Lys	His Ala Asp 1470
Ser Val Leu Glu 1475		hr Glu Ile V .480	Val Met Ser 1485	
Thr Phe Phe Ser 1490	Ser Pro Phe S 1495	Ser Asp Gln S	Ser Thr Thr 1500	Leu Gln Thr
Arg Gln Pro Val 1505	Phe Val Gln L 1510		Gly Val Phe 1515	Arg Val Tyr 1520
His Cys Asn Trp	Leu Met Pro S 1525	Ser Gln Lys A 1530		Glu Ser Cys 1535
Ile Arg Val Leu 1540	=	la Lys Ser <i>l</i> 1545	Arg Ala Ile	Ala Ile Pro 1550
Val Asp Leu Asp 1555		asn Asn Leu 1 .560	Phe Leu Lys 156!	
Ile Val Gln Lys 1570	Thr Ala Met A 1575	sn Trp Arg	Leu Ser Ala 1580	Arg Asn Ala
Ala Arg Arg Asp 1585	Glu Val Leu A 1590		Arg Asp Tyr 1595	Arg Asn Ile 1600
Ile Glu Arg Leu	Gln Asp Ile V 1605	al Ser Ala 1 1610	Leu Glu Asp	Arg Leu Arg 1615
Pro Leu Val Gln 1620	•	Ser Val Leu ' 1625	Val Asp Val	Leu His Arg 1630
Pro Glu Leu Leu 1635		sn Thr Asp 1 .640	Ala Arg Arg 164!	
Ser Gly Gly Phe 1650	Ile Cys Lys L 1655	eu Ile Lys I	His Thr Lys 1660	Gln Leu Leu

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Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                1670
                                  1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
                              1690
             1685
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
                  1705
          1700
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
                       1720
                                        1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
                                     1740
                    1735
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Asp Leu Thr Ser Phe Gly
                1750
                                  1755
Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
             1765
                              1770
Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
          1780
                          1785
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
            1800
      1795
Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
                   1815
                                     1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
1825 1830
                        . 1835
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
                              1850
           1845
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala
                1865
        1860
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp
      1875 1880
                                        1885
Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
         1895
                                      1900
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
       1910
                                  1915
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
             1925
                     1930
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
                           1945
                                             1950
         1940
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
      1955 1960
                                         1965
Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln
          1975
                                      1980
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
      1990 1995
Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
             2005
                               2010
Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
          2020
                           2025
Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
      2035 2040
                                         2045
Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
          2055
                                      2060
Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
                 2070
                                2075
Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu
             2085
                               2090
Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
               2105
          2100
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr
      2115
                        2120
                                          2125
Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly
   2130 2135
                                      2140
Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His
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2145	2150		2155			2160
Gln Leu Ala Arg		Lys Glu Le			Lys Pro 2175	Gly
Gly Gln Val Asp 218			eu Glu Phe 185	Tyr Ala	Lys His 2190	Thr
Ala Gln Ile Glu 2195	Ile Val A	Arg Leu As 2200	sp Arg Thr	Met Glu 2205		Val
Phe Pro Val Pro 2210	2	2215		2220		
Arg Ile Tyr Tyr 2225	Thr Thr 6	Glu Arg As	sp Glu Gln 2235		Lys Ile	Asn 2240
Asp Phe Phe Leu	Arg Ser G	Glu Asp Le	eu Phe Asn 2250	Glu Met	Asn Trp 2255	
Lys Lys Leu Arg 226			eu Tyr Trp 265	Cys Ala	Arg Asn 2270	Met
Ser Phe Trp Ser 2275	Ser Ile S	Ser Phe As 2280	sn Leu Ala	Val Leu 2285		Leu
Leu Val Ala Phe 2290		Pro Phe Ly 2295	ys Gly Val	Arg Gly 2300	Gly Thr	Leu
Glu Pro His Trp 2305	Ser Gly I 2310	Leu Leu Tr	p Thr Ala 2315		Ile Ser	Leu 2320
Ala Ile Val Ile	Ala Leu F 2325	Pro Lys Pr	to His Gly 2330	Ile Arg	Ala Leu 2335	
Ala Ser Thr Ile 234			ne Ser Val 345	Gly Leu	Gln Pro 2350	Thr
Leu Phe Leu Leu 2355	Gly Ala F	Phe Asn Va 2360	al Cys Asn	Lys Ile 2365		Leu
Met Ser Phe Val 2370		Cys Gly Th 2375	nr Phe Thr	Arg Gly 2380	Tyr Arg	Ala
Met Val Leu Asp 2385	Val Glu F 2390	Phe Leu Ty	r His Leu 2395		Leu Leu	Ile 2400
Cys Ala Met Gly	Leu Phe V	Val His Gl		Tyr Ser	Leu Leu 2415	
Phe Asp Leu Val 242			nr Leu Leu 125		Ile Lys 2430	Ser
Val Thr Arg Asn 2435		Pro Ile Il 2440	le Leu Thr	Ala Ala 2445		Leu
Ile Leu Val Tyr 2450		Ser Ile Va 2455		Leu Phe 2460	Phe Lys	Asp
Asp Phe Ile Leu 2465	Glu Val A 2470	Asp Arg Le	eu Pro Asn	Clu Thr	Ala Gly	Pro
Glu Thr Gly Glu			2475		Ala Giy	2480
Arg Val Glu Thr		Ala Asn As		5		Cys
250	Ser Leu A 2485 Gly Glu A	Asn Cys Th	sp Phe Leu 2490	Tyr Ser	Asp Val 2495	Cys
	Ser Leu A 2485 Gly Glu A O	Asn Cys Th 25	sp Phe Leu 2490 ar Ser Pro	Tyr Ser Ala Pro	Asp Val 2495 Lys Glu 2510 Thr Cys	Cys Glu
250 Leu Leu Pro Val	Ser Leu F 2485 Gly Glu F O Glu Glu T Cys Ile V	Asn Cys Th 25 Thr Glu Gl 2520	sp Phe Leu 2490 ar Ser Pro 505 In Asp Lys	Tyr Ser Ala Pro Glu His 2525	Asp Val 2495 Lys Glu 2510 Thr Cys	Cys Glu Glu
250 Leu Leu Pro Val 2515 Thr Leu Leu Met	Ser Leu F 2485 Gly Glu F O Glu Glu T Cys Ile V	Asn Cys Th 25 Thr Glu Gl 2520 Val Thr Va 2535	sp Phe Leu 2490 ar Ser Pro 505 In Asp Lys	Tyr Ser Ala Pro Glu His 2525 His Gly 2540 Ser Lys	Asp Val 2495 Lys Glu 2510 Thr Cys Leu Arg	Cys Glu Glu Ser
Leu Leu Pro Val 2515 Thr Leu Leu Met 2530 Gly Gly Gly Val	Ser Leu F 2485 Gly Glu F 0 Glu Glu T Cys Ile V 2 Gly Asp V 2550	Asn Cys Th 25 Thr Glu Gl 2520 Val Thr Va 2535 Val Leu Ar	sp Phe Leu 2490 ar Ser Pro 505 ln Asp Lys al Leu Ser rg Lys Pro 2555	Tyr Ser Ala Pro Glu His 2525 His Gly 2540 Ser Lys	Asp Val 2495 Lys Glu 2510 Thr Cys Leu Arg	Cys Glu Glu Ser Pro 2560 Val
Leu Leu Pro Val 2515 Thr Leu Leu Met 2530 Gly Gly Gly Val 2545	Ser Leu F 2485 Gly Glu F 0 Glu Glu T Cys Ile V 2550 Arg Val 1 2565 Leu Asn I	Asn Cys Th 25 Thr Glu Gl 2520 Val Thr Va 2535 Val Leu Ar Ile Tyr As	sp Phe Leu 2490 ar Ser Pro 505 ln Asp Lys al Leu Ser rg Lys Pro 2555 sp Leu Leu 2570 ae Gly Val	Tyr Ser Ala Pro Glu His 2525 His Gly 2540 Ser Lys Phe Phe	Asp Val 2495 Lys Glu 2510 Thr Cys Leu Arg Glu Glu Phe Met 2575 Asp Thr	Cys Glu Glu Ser Pro 2560 Val
Leu Leu Pro Val 2515  Thr Leu Leu Met 2530  Gly Gly Gly Val 2545  Leu Phe Ala Ala  Ile Ile Ile Val 258  Ala Asp Leu Arg	Ser Leu F 2485 Gly Glu F 0 Glu Glu T Cys Ile V 2550 Arg Val 1 2565 Leu Asn I	Asn Cys Th 25 Thr Glu Gl 2520 Val Thr Va 2535 Val Leu Ar Ile Tyr As Leu Ile Ph 25 Lys Gln Ly	sp Phe Leu 2490 ar Ser Pro 505 ln Asp Lys al Leu Ser rg Lys Pro 2559 sp Leu Leu 2570 ale Gly Val	Tyr Ser Ala Pro Glu His 2525 His Gly 2540 Ser Lys Phe Phe Ile Ile Glu Ile	Asp Val 2495 Lys Glu 2510 Thr Cys Leu Arg Glu Glu Phe Met 2575 Asp Thr 2590 Leu Lys	Cys Glu Glu Ser Pro 2560 Val Dhe
Leu Leu Pro Val 2515  Thr Leu Leu Met 2530  Gly Gly Gly Val 2545  Leu Phe Ala Ala  Ile Ile Ile Val 258	Ser Leu F 2485 Gly Glu F 0 Glu Glu T Cys Ile V 2550 Arg Val I 2565 Leu Asn I 0 Ser Glu I	Asn Cys Th 25 Thr Glu Gl 2520 Val Thr Va 2535 Val Leu Ar Ile Tyr As Leu Ile Ph 25 Lys Gln Ly 2600 Leu Glu Ar	sp Phe Leu 2490 ar Ser Pro 505 ln Asp Lys al Leu Ser rg Lys Pro 2555 sp Leu Leu 2570 al Gly Val 585 ys Lys Glu	Tyr Ser Ala Pro Glu His 2525 His Gly 2540 Ser Lys Phe Phe Ile Ile Glu Ile 2605 Phe Asp	Asp Val 2495 Lys Glu 2510 Thr Cys Leu Arg Glu Glu Phe Met 2575 Asp Thr 2590 Leu Lys	Cys Glu Glu Ser Pro 2560 Val Phe
Leu Leu Pro Val 2515  Thr Leu Leu Met 2530  Gly Gly Gly Val 2545  Leu Phe Ala Ala  Ile Ile Ile Val 258  Ala Asp Leu Arg 2595  Thr Cys Phe Ile	Ser Leu F 2485 Gly Glu F 0 Glu Glu T Cys Ile V 2550 Arg Val 1 2565 Leu Asn I 0 Ser Glu I	Asn Cys Th 25 Thr Glu Gl 2520 Val Thr Va 2535 Val Leu Ar Ile Tyr As Leu Ile Ph 25 Lys Gln Ly 2600 Leu Glu Ar	sp Phe Leu 2490 ar Ser Pro 505 ln Asp Lys al Leu Ser rg Lys Pro 2555 sp Leu Leu 2570 ae Gly Val 585 ys Lys Glu rg Asp Lys	Tyr Ser Ala Pro Glu His 2525 His Gly 2540 Ser Lys Phe Phe Ile Ile Glu Ile 2605 Phe Asp 2620 Asn Met	Asp Val 2495 Lys Glu 2510 Thr Cys Leu Arg Glu Glu Phe Met 2575 Asp Thr 2590 Leu Lys Asn Lys	Cys Glu Glu Ser Pro 2560 Val Phe Thr

Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr 2645 2650 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp 2660 2665 2670 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu 2680 2685 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr 2695 2700 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp 2710 2715 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly 2725 2730 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala 2745

<210> 17 <211> 2710 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn 55 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala 70 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala 90 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 100 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro 180 185 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu 200 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met 215 220 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val 230 235 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His 250 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala 265 270 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln

		275					280					285			
His	Asp 290	Pro	Cys	Arg	Gly	Gly 295	Ala	Gly	Tyr	Trp	Asn 300	Ser	Leu	Phe	Arg
Phe 305	Lys	His	Leu	Ala	Thr 310	Gly	His	Tyr	Leu	Ala 315	Ala	Glu	Val	Asp	Pro 320
Asp	Phe	Glu	Glu	Glu 325	Cys	Leu	Glu	Phe	Gln 330	Pro	Ser	Val	Asp	Pro 335	Asp
Gln	Asp	Ala	Ser 340	Arg	Ser	Arg	Leu	Arg 345	Asn	Ala	Gln	Glu	Lys 350	Met	Val
_		355					360	_				365		Ile	
	370	_				375		_	_		380			Pro	
385					390					395				Val	400
				405			_		410					Met 415	
_			420					425					430	Ala	
		435					440					445		Asn Gly	
	450					455					460			Asp	
465	1111	GIII	ASII	Giu	470	AL 9	DCI	vai		475	Deu	Бси	Olu	дор	480
				485					490					Leu 495	
			500		,			505					510	Arg	
		515		-			520					525		Phe	
	530					535					540			Asp	
545					550					555				Val Ala	560
_				565					570					575 Ala	
		_	580					585					590	Glu	
_		595					600					605		Arg	
	610					615					620				
625	Arg	GIU	Pro	Arg	630	ьеu	Asp	TYL	ьeu	635	Asp	ьeu	Cys	vai	Ser 640
Met	Asn	Lys	Ser	Ile 645	Pro	Val	Thr	Gln	Glu 650	Leu	Ile	Cys	Lys	Ala 655	Val
Leu	Asn	Pro	Thr 660	Asn	Ala	Asp	Ile	Leu 665	Ile	Glu	Thr	Lys	Leu 670	Val	Leu
	_	675				_	680					685		Leu	
	690		_			695		_			700			Ser	
Lys 705	Glu	Ile	Arg	Ser	Lys 710	Ser	Val	Arg	Glu	Leu 715	Ala	Gln	Asp	Ala	Lys 720
	Gly	Gln	Lys	Glu 725		Arg	Asp	Val	Leu 730		Tyr	Tyr	Arg	Tyr 735	
Leu	Asn	Leu	Phe 740	Ala	Arg	Met	Cys	Leu 745	Asp	Arg	Gln	Tyr	Leu 750	Ala	Ile
Asn	Glu	Ile 755	Ser	Gly	Gln	Leu	Asp 760	Val	Asp	Leu	Ile	Leu 765	Arg	Cys	Met

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Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                       775
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                                       795
                   790
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
               805
                                   810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
                               825
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                           840
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                       855
                                           860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
                   870
                                       875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
                                   890
               885
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
                               905
           900
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                           920
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                       935
                                           940
Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                   950
                                       955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                   970
               965
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
           980
                               985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
       995
                           1000
                                              1005
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
                       1015
                                          1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                   1030
                                      1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
               1045
                                  1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
           1060
                           1065
                                                  1070
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                          1080
                                            1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
                      1095
                                           1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
                   1110
                                       1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
               1125
                                   1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
           1140
                               1145
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                           1160
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
                       1175
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
                   1190
                                       1195
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
               1205
                                   1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
           1220
                                                  1230
                              1225
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
                          1240
                                               1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
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1250	1255	5		1260		
Pro Gly Ile Leu Gl	u Ala Val	Thr Met	Gln His	Ile Phe	Met Asn	Asn
1265	1270		1275			1280
Phe Gln Leu Cys Se	er Glu Ile 185	Asn Glu	Arg Val 1290	Val Gln	His Phe 1295	
His Cys Ile Glu Th	r His Gly	Arg Asn 1305		Tyr Ile	Lys Phe 1310	Leu
Gln Thr Ile Val Ly 1315	s Ala Glu	Gly Lys 1320	Phe Ile	Lys Lys		Asp
Met Val Met Ala Gl	u Leu Val. 1335	Asn Ser	Gly Glu			Phe
Tyr Asn Asp Arg Al	a Ser Phe			Gln Met	Met Arg	
1345 Glu Arg Asp Arg Me	1350	Asn Ser	1355		Tur His	1360
	665	ASII SEL	1370	FIIC MCC	1375	
His Leu Val Glu Le		Val Cys 1385	Thr Glu	Gly Lys		
Thr Glu Ile Lys Cy	s Asn Ser			Asp Asp		Arg
1395		1400		140		
Val Val Thr His Gl 1410	1419	5		1420		
Asn Phe Leu Asn Hi		Val Asp			Met Lys	
1425	1430		1435		Db - T	1440
	145		1450		1455	5
Asp Ile Cys Arg Al 1460	_	1469	5		1470	
Ser Val Leu Glu Ly 1475	s Tyr Val	Thr Glu 1480	Ile Val	Met Ser 148		Thr
Thr Phe Phe Ser Se	er Pro Phe 149!		Gln Ser	Thr Thr 1500	Leu Gln	Thr
Arg Gln Pro Val Ph	ne Val Gln 1510	Leu Leu	Gln Gly 151		Arg Val	Tyr 1520
His Cys Asn Trp Le	eu Met Pro 525	Ser Gln	Lys Ala 1530	Ser Val	Glu Ser 1539	
Ile Arg Val Leu Se 1540		Ala Lys 1545		Ala Ile	Ala Ile 1550	Pro
Val Asp Leu Asp Se	er Gln Val	Asn Asn 1560	Leu Phe	Leu Lys		Asn
Ile Val Gln Lys Th	nr Ala Met 157	Asn Trp	Arg Leu	Ser Ala	Arg Asn	Ala
Ala Arg Arg Asp Se	_	-	Ser Arg		Arg Asn	Ile 1600
Ile Glu Arg Leu Gl		Val Ser			Arg Leu	
16	505		1610		161	5
Pro Leu Val Gln Al	la Glu Leu			Asp Val		Arg
1620 Pro Glu Leu Leu Pl	ne Pro Glu	1625		Ara Ara	1630	Glu
1635					LLYS CYS	JIU
		1640	_	164		
Ser Gly Gly Phe II	le Cys Lys 165:	1640 Leu Ile 5	Lys His	164 Thr Lys 1660	Gln Leu	Leu
Ser Gly Gly Phe I	le Cys Lys 165:	1640 Leu Ile 5	Lys His	164 Thr Lys 1660 Leu Glr	Gln Leu	Leu
Ser Gly Gly Phe II 1650 Glu Glu Asn Glu GI 1665 Glu Met Met Thr Ly	le Cys Lys 165: lu Lys Leu 1670	1640 Leu Ile 5 Cys Ile	Lys His	164 Thr Lys 1660 Leu Glr	Gln Leu Thr Leu	Leu Arg 1680 Leu
Ser Gly Gly Phe II 1650 Glu Glu Asn Glu Gi 1665 Glu Met Met Thr Ly 16 Arg Gln Ile Leu Va	le Cys Lys 165 lu Lys Leu 1670 ys Asp Arg	1640 Leu Ile 5 Cys Ile Gly Tyr	Lys His Lys Val 167 Gly Glu 1690 Gly Asn	164 Thr Lys 1660 Leu Glr 5 Lys Gly	Gln Leu Thr Leu Glu Ala 1699	Leu Arg 1680 Leu 5
Ser Gly Gly Phe II 1650 Glu Glu Asn Glu Gi 1665 Glu Met Met Thr Ly	le Cys Lys 165: lu Lys Leu 1670 ys Asp Arg 585 al Asn Arg	1640 Leu Ile 5 Cys Ile Gly Tyr Tyr Tyr 1709	Lys His Lys Val 167 Gly Glu 1690 Gly Asn	164 Thr Lys 1660 Leu Glr 5 Lys Gly	Thr Leu Clu Ala 169 Pro Ser 1710 Ser Pro	Leu Arg 1680 Leu 5 Gly

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Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
                 1750
                                   1755
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
              1765
                                1770
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
          1780
                            1785
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
                        1800
       1795
                                          1805
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
                    1815
                                       1820
Lys Val Ala Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
                                   1835
                 1830
Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
             1845 1850
Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
          1860
                           1865
Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
                        1880
                                1885
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
           1895 1900
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
                1910
                                   1915
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
                               1930
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
                           1945
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
                        1960
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr
                    1975
                                      1980
Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
                 1990
                                  1995
Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
             2005
                               2010
Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
          2020
                           2025
Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu
                        2040
                                          2045
Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His
                    2055
                                      2060
Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu
                 2070
                                   2075
Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
                               2090
             2085
Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
          2100
                           2105
                                             2110
Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
              2120
                                          2125
Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
                    2135
                                      2140
Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
                2150
                                2155
Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
             2165
                               2170
Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
          2180
                 2185
Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
                        2200
Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
   2210 2215 2220
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
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2225	2230	)		2235		2	2240
Phe Asn Leu Ala			Leu Leu 225	Val Ala	Phe Phe	Tyr F	Pro
Phe Lys Gly Val		Gly Thr	Leu Glu 2265	Pro His	Trp Ser		Leu
Leu Trp Thr Ala 2275	Met Leu	Ile Ser 228		Ile Val	Ile Ala 2285	Leu F	Pro
Lys Pro His Gly 2290	Ile Arg	Ala Leu 2295	Ile Ala	Ser Thr 230		Arg I	Leu
Ile Phe Ser Val	Gly Leu 2310		Thr Leu	Phe Leu 2315	Leu Gly		he 2320
Asn Val Cys Asn	Lys Ile 2325	Ile Phe	Leu Met 233		Val Gly	Asn C	Cys
Gly Thr Phe Thr		Tyr Arg	Ala Met 2345	Val Leu	Asp Val		he
Leu Tyr His Leu 2355	Leu Tyr	Leu Leu 236	_	Ala Met	Gly Let 2365	Phe V	/al
His Glu Phe Phe 2370		Leu Leu 2375	Leu Phe	Asp Leu 238		Arg G	3lu
Glu Thr Leu Leu 2385	Asn Val 2390		Ser Val	Thr Arg 2395	Asn Gly		Pro 2400
Ile Ile Leu Thr	2405		241	0		2415	
Ile Val Gly Tyr 242	0		2425		243	0	
Arg Leu Pro Asn 2435		244	0		2445		
Asn Asp Phe Leu 2450		2455		246	0		
Cys Thr Ser Pro 2465	2470	o <sup>-</sup>		2475		2	2480
Glu Gln Asp Lys	2485		249	0		2495	
Thr Val Leu Ser 250	0		2505		251	-0	
Leu Arg Lys Pro	Ser Lys	Glu Glu	Pro Leu	Phe Ala		y Val I	[le
2515		252		_	2525		
2515 Tyr Asp Leu Leu 2530	Phe Phe	252 Phe Met 2535	Val Ile	254	Val Leu 0		
2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545	Phe Phe Ile Ile 2550	252 Phe Met 2535 Asp Thr	Val Ile	254 Asp Leu 2555	Val Leu 0 Arg Ser	Glu I	Уз 2560
2515 Tyr Asp Leu Leu 2530 Ile Phe Gly Val 2545 Gln Lys Lys Glu	Phe Phe Ile Ile 2550 Glu Ile 2565	252 Phe Met 2535 Asp Thr ) Leu Lys	Val Ile Phe Ala Thr Thr 257	254 Asp Leu 2555 Cys Phe 0	Val Let 0 Arg Ser Ile Cys	Glu I 2 Gly I 2575	Lys 2560 Leu
Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545 Gln Lys Lys Glu Glu Arg Asp Lys 258	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp	252 Phe Met 2535 Asp Thr ) Leu Lys Asn Lys	Val Ile Phe Ala Thr Thr 257 Thr Val 2585	254 Asp Leu 2555 Cys Phe O Thr Phe	Val Let 0 Arg Ser Ile Cys Glu Glu 259	Glu I 25 Gly I 2575 1 His I	Lys 2560 Leu Ile
Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545 Gln Lys Lys Glu  Glu Arg Asp Lys 258 Lys Glu Glu His 2595	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp O Asn Met	252 Phe Met 2535 Asp Thr  Leu Lys Asn Lys Trp His 260	Val Ile Phe Ala Thr Thr 257 Thr Val 2585 Tyr Leu 0	254 Asp Leu 2555 Cys Phe O Thr Phe	Val Let 0 Arg Ser Ile Cys Glu Glu 259 Ile Val 2605	Glu I 25 Gly I 2575 His I 90 Leu V	Lys 2560 Leu Ile Val
Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545  Gln Lys Lys Glu  Glu Arg Asp Lys 258  Lys Glu Glu His 2595  Lys Val Lys Asp 2610	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp O Asn Met Ser Thr	252 Phe Met 2535 Asp Thr Leu Lys Asn Lys Trp His 260 Glu Tyr 2615	Val Ile Phe Ala Thr Thr 257 Thr Val 2585 Tyr Leu 0 Thr Gly	254 Asp Leu 2555 Cys Phe O Thr Phe Cys Phe Pro Glu 262	Val Let 0 Arg Ser Ile Cys Glu Glu 259 Ile Val 2605 Ser Tyr	Glu I 2 Gly I 2575 His I 00 Leu V	Lys 2560 Leu Ile Val
Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545  Gln Lys Lys Glu  Glu Arg Asp Lys 258 Lys Glu Glu His 2595  Lys Val Lys Asp 2610  Glu Met Ile Arg 2625	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp O Asn Met Ser Thr Glu Arg 2630	252 Phe Met 2535 Asp Thr  Leu Lys Asn Lys Trp His 260 Glu Tyr 2615 Asn Leu	Val Ile Phe Ala Thr Thr 257 Thr Val 2585 Tyr Leu O Thr Gly Asp Trp	254 Asp Leu 2555 Cys Phe 0 Thr Phe Cys Phe Pro Glu 262 Phe Pro 2635	Val Leu  O  Arg Ser  Ile Cys  Glu Glu  259  Ile Val  2605  Ser Tyr  O  Arg Met	Glu I 25 Gly I 2575 1 His I 60 L Leu V C Val A	Lys 2560 Leu Ile Val Ala Ala 2640
Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545  Gln Lys Lys Glu  Glu Arg Asp Lys 258  Lys Glu Glu His 2595  Lys Val Lys Asp 2610  Glu Met Ile Arg 2625  Met Ser Leu Val	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp O Asn Met Ser Thr Glu Arg 2630 Ser Ser 2645	Phe Met 2535 Asp Thr Leu Lys Asn Lys Trp His 260 Glu Tyr 2615 Asn Leu Asp Ser	Val Ile Phe Ala Thr Thr 257 Thr Val 2585 Tyr Leu 0 Thr Gly Asp Trp Glu Gly 265	254 Asp Leu 2555 Cys Phe  Thr Phe Cys Phe Pro Glu 262 Phe Pro 2635 Glu Gln 0	Val Let 0 Arg Ser Ile Cys Glu Glu 259 Ile Val 2605 Ser Tyr 0 Arg Met	Glu I 25 Gly I 2575 1 His I 60 1 Leu V 2 Val A 2 Arg A 2 Leu A 2 2655	Lys 2560 Leu Ile Val Ala Ala 2640 Arg
Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545  Gln Lys Lys Glu  Glu Arg Asp Lys 258 Lys Glu Glu His 2595  Lys Val Lys Asp 2610  Glu Met Ile Arg 2625	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp O Asn Met Ser Thr Glu Arg 2630 Ser Ser 2645 Lys Leu	Phe Met 2535 Asp Thr Leu Lys Asn Lys Trp His 260 Glu Tyr 2615 Asn Leu Asp Ser	Val Ile Phe Ala Thr Thr 257 Thr Val 2585 Tyr Leu 0 Thr Gly Asp Trp Glu Gly 265	254 Asp Leu 2555 Cys Phe  Thr Phe Cys Phe Pro Glu 262 Phe Pro 2635 Glu Gln 0	Val Let 0 Arg Ser Ile Cys Glu Glu 259 Ile Val 2605 Ser Tyr 0 Arg Met	Glu I 2575 His I 90 Leu V C Val A 2 Arg A 2 Leu A 2655 Asn I	Lys 2560 Leu Ile Val Ala Ala 2640 Arg
2515 Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545 Gln Lys Lys Glu Glu Arg Asp Lys 258 Lys Glu Glu His 2595 Lys Val Lys Asp 2610 Glu Met Ile Arg 2625 Met Ser Leu Val Asn Leu Gln Glu 266 Ser Gly Gln Leu 2675	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp Asn Met Ser Thr Glu Arg 2630 Ser Ser 2645 Lys Leu Ser Glu	Phe Met 2535 Asp Thr Leu Lys Asn Lys Trp His 260 Glu Tyr 2615 Asn Leu Asp Ser Glu Ser Leu Lys 268	Val Ile Phe Ala Thr Thr 257 Thr Val 2585 Tyr Leu O Thr Gly Asp Trp Glu Gly 265 Thr Met 2665 Asp Gln O	Asp Leu 2555 Cys Phe 0 Thr Phe Cys Phe Pro Glu 262 Phe Pro 2635 Glu Gln 0 Lys Leu Met Thr	Val Lett  O  Arg Ser  Ile Cys  Glu Glt 255  Ile Val 2605 Ser Tyr  O  Arg Met  Asn Glt  Val Thr 267  Glu Glr 2685	Glu I 25 Gly I 2575 i His I 60 Leu V C Val A 2 Arg A 2655 c Asn I 70 i Arg I	Lys 2560 Leu Ile Val Ala Ala 2640 Arg Leu
2515 Tyr Asp Leu Leu 2530  Ile Phe Gly Val 2545 Gln Lys Lys Glu Glu Arg Asp Lys 258 Lys Glu Glu His 2595 Lys Val Lys Asp 2610 Glu Met Ile Arg 2625 Met Ser Leu Val Asn Leu Gln Glu 266 Ser Gly Gln Leu	Phe Phe Ile Ile 2550 Glu Ile 2565 Phe Asp Asn Met Ser Thr Glu Arg 2630 Ser Ser 2645 Lys Leu O Ser Glu Ile Gly	Phe Met 2535 Asp Thr Leu Lys Asn Lys Trp His 260 Glu Tyr 2615 Asn Leu Asp Ser Glu Ser Leu Lys	Val Ile Phe Ala Thr Thr 257 Thr Val 2585 Tyr Leu O Thr Gly Asp Trp Glu Gly 265 Thr Met 2665 Asp Gln O	Asp Leu 2555 Cys Phe 0 Thr Phe Cys Phe Pro Glu 262 Phe Pro 2635 Glu Gln 0 Lys Leu Met Thr	Val Lett  O  Arg Ser  Ile Cys  Glu Glu 255  Ile Val 2605 Ser Tyr  O  Arg Met  Asn Glu  Val Thr 267  Glu Glr 2685 His Met	Glu I 25 Gly I 2575 i His I 60 Leu V C Val A 2 Arg A 2655 c Asn I 70 i Arg I	Lys 2560 Leu Ile Val Ala Ala 2640 Arg Leu

<210> 18

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<213> Artificial Sequence
<223> Description of Artificial Sequence:/note =
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Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
                               25
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
                            40
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
                                    90
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
                                105
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
                            120
                                                125
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                        135
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
                                        155
                    150
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
                                    170
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
                                185
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
                            200
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                        215
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
                   230
                                        235
Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His
                                    250
               245
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
                                265
            260
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
                            280
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
                        295
                                            300
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
                   310
                                        315
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
                                    330
                325
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
                                345
            340
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
                            360
                                                365
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
                        375
                                            380
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
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385
                                       395
                                                           400
                   390
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu
               405
                                   410
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
           420
                               425
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
                           440
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                      455
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
                   470
                                       475
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
                485
                                   490
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
                               505
           500
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
                           520
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
                       535
                                            540
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
                   550
                                        555
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys
               565
                                   570
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
           580
                               585
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
                           600
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
                       615
                                           620
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                    630
                                        635
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
                                    650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
                                665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                           680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                       695
                                            700
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                    710
                                        715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
                725
                                    730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
                                745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                            760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                        775
                                            780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                    790
                                        795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
                805
                                    810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
           820
                                825
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                            840
                                                845
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                       855
                                           860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
                    870
                                        875
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Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
                              890
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
                           905
          900
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                       920
                                        925
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                   935
                                     940
Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                950
                                 955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
            965
                              970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
                          985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
                      1000
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
          1015
                                    1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                1030
                                 1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
            1045
                    1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
                1065 ·
         1060
                                           1070
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
 1075 1080
                               1085
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
         1095
                                    1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
      1110 1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
            1125
                             1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
         1140
                          1145
                                           1150
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                      1160
                            1165
     1155
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
                   1175
                                    1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
                        1195
    1190
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
          1205
                              1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
         1220
                          1225
                                   1230
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
      1235
             1240
                                        1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
   1250 1255
                                    1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
                1270
                        1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arq Val Val Gln His Phe Val
                              1290
             1285
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
         1300
                1305
                                            1310
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
                       1320
                              1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
   1330
         1335
                                    1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
    1350 1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
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1370
              1365
                                                1375
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
                           1385
          1380
                                             1390
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
                       1400
                                         1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
                    1415
                                     1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
                 1430
                                  1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
                              1450
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
          1460
                           1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
                        1480
                                         1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
                    1495
                                      1500
Arg Gln Pro Val Phe Val Gln Leu Gln Gly Val Phe Arg Val Tyr
                1510
                                  1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
             1525 1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
         1540 1545
                                            1550
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
      1555
                       1560
                                        1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                    1575
                                     1580
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
       1590
                                  1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
             1605
                               1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
          1620
                           1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
      1635
                       1640
                                         1645
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
          1655
                                      1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
                1670
                                  1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
             1685
                               1690
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
          1700
                           1705
                                             1710
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
      1715
                       1720
                                         1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
   1730
                    1735
                                     1740
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly
                1750
                                 1755
Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
             1765
                               1770
Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
          1780
                           1785
                                            1790
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
      1795
                        1800
                                         1805
Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
                    1815
                                      1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
                1830
                                  1835
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
                               1850
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Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Glu Ile Lys Ala
           1860
                             1865
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Asp Asp
                          1880
       1875
                                            1885
Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
                      1895
                                         1900
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
                  1910
                                     1915
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
              1925
                                 1930
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
           1940
                             1945
                                                1950
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
                         1960
       1955
                                            1965
Leu Arg Phe Leu Gln Leu Cys Glu Asn His Asn Arg Asp Leu Gln
   1970
                     1975
                                         1980
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
                                    1995
                  1990
Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
              2005
                                 2010
Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
                            2025
           2020
                                                2030
Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
                         2040
       2035
                                            2045
Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
                     2055
   2050
                                        2060
Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
                 2070
                                    2075
Met Asp Leu Val Leu Glu Leu Lys Asn Ala Ser Lys Leu Leu Leu
              2085
                                 2090
Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
          2100
                            2105
                                               2110
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr
                         2120
                                            2125
Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly
                     2135
                                        2140
Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His
                 2150
                                    2155
Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly
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                                 2170
Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr
          2180
                             2185
                                                2190
Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val
                         2200
                                            2205
Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu
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                                        2220
Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
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                                     2235
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln
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Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met
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Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu
                          2280
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu
                     2295
                                        2300
Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu
                  2310
                                    2315
Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile
              2325
                                 2330
Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr
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2340
                            2345
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu
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       2355
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
                     2375
                                      2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
                 2390
                                   2395 2400
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu
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                                2410
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
          2420
                            2425
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
                        2440
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
                    2455
                                      2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
                 2470
                                   2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
              2485
                               2490
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
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          2500
                                              2510
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
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                        2520
                                          2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
                     2535
                                       2540
Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
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Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Met Val
                               2570
              2565
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
          2580
                            2585
                                              2590
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
      2595 2600
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
                     2615 2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
                 2630
                                   2635
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
              2645
                                2650
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
          2660
                            2665
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
              2680
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
                    2695
                                       2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
                 2710
                                   2715
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
                               2730
              2725
His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
          2740
                            2745
```

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<210> 19
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<sup>&</sup>lt;211> 2701

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

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Met Ser Asp Lys Met Ser Ser Phe Leu Tyr Ile Gly Asp Ile Val Ser
                                    10
Leu Tyr Ala Glu Gly Ser Val Asn Gly Phe Ile Ser Thr Leu Gly Leu
                               25
Val Asp Asp Arg Cys Val Val His Pro Glu Ala Gly Asp Leu Thr Asn
                           40
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Val Cys Pro Met Asn
Arg Tyr Ser Ala Gln Lys Gln Tyr Trp Lys Ala Lys Gln Ala Lys Gln
Gly Asn His Thr Glu Ala Ala Leu Leu Lys Lys Leu Gln His Ala Ala
Glu Leu Glu Gln Lys Gln Asn Glu Ser Glu Asn Arg Lys Leu Leu Gly
                               105
Glu Ile Val Lys Tyr Ser Lys Val Ile Gln Leu Leu His Ile Lys Ser
                           120
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                       135
Asn Ala Met Arg Val Ser Leu Asp Ala Ala Gly Asn Glu Gly Ser Trp
                   150
                                       155
Phe Tyr Ile His Pro Phe Trp Lys Leu Arg Ser Glu Gly Asp Asn Ile
                                   170
Val Val Gly Asp Lys Val Val Leu Met Pro Val Asn Ala Gly Gln Pro
                               185
           180
Leu His Ala Ser Asn Val Glu Leu Leu Asp Asn Pro Gly Cys Lys Glu
                            200
Val Asn Ala Val Asn Cys Asn Thr Ser Trp Lys Ile Thr Leu Phe Met
                       215
                                            220
Lys Phe Ser Ser Tyr Arg Glu Asp Val Leu Lys Gly Gly Asp Val Val
                   230
                                        235
Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Asp Tyr
               245
                                    250
Glu Lys Lys Gln His Ile Phe Leu Arg Thr Thr Leu Arg Gln Ser Ala
           260
                                265
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Ile Glu Val Val His
                           280
                                                285
His Asp Pro Cys Arg Gly Gly Ala Gly Gln Trp Asn Ser Leu Phe Arg
                        295
                                            300
Phe Lys His Leu Ala Thr Gly Asn Tyr Leu Ala Ala Glu Leu Asn Pro
                    310
                                        315
Asp Tyr Arg Asp Ala Gln Asn Glu Gly Lys Thr Val Arg Asp Gly Glu
                325
                                    330
Leu Pro Thr Ser Lys Lys His Gln Ala Gly Glu Lys Ile Met Tyr
                                345
Thr Leu Val Ser Val Pro His Gly Asn Asp Ile Ala Ser Leu Phe Glu
                            360
Leu Asp Ala Thr Thr Leu Gln Arg Ala Asp Cys Leu Val Pro Arg Asn
Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val Thr Ser
                    390
                                        395
Thr Ser Ile Pro Ile Asp Thr Glu Glu Glu Arg Pro Val Met Leu Lys
                                    410
Ile Gly Thr Cys Gln Thr Lys Glu Asp Lys Glu Ala Phe Ala Ile Val
                                425
Cys Val Pro Leu Ser Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala
                            440
                                                445
Asn Lys Val Leu Ala Thr Thr Val Lys Lys Leu Glu Asn Gly Ser Ile
                       455
                                            460
Thr Gln Asn Glu Arg Arg Phe Val Thr Lys Leu Leu Glu Asp Leu Ile
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4.65					470					475					480
465 Phe	Phe	Val	Ala	Asp		Thr	Asn	Asn	Gly 490	475 Gln	Asp	Val	Leu	Asp 495	
Val	Ile	Thr	Lys 500		Asn	Arg	Glu	Arg 505		Lys	Leu	Met	Arg 510	Glu	Gln
Asn	Ile	Leu 515	Ala	Gln	Val	Phe	Gly 520		Leu	Lys	Ala	Pro 525	Phe	Lys	Glu
Lys	Ala 530	Gly	Glu	Gly	Ser	Met 535	Leu	Arg	Leu	Glu	Asp 540	Leu	Gly	Asp	Gln
Arg 545	Tyr	Ala	Pro	Tyr	Lys 550	Tyr	Val	Leu	Arg	Leu 555	Cys	Tyr	Arg	Val	Leu 560
_				565	_	_		_	570					Ala 575	
			580					585					590	Ala	
=		595				•	600					605		Glu	
	610			_		615					620			Arg Val	
625					630		_			635				Phe	640
				645					650					655 Val	
			660					665					670	Asp	
		675					680					685		Glu	
_	690				_	695	-				700				
705					710					715				Gly	720
				725					730					Asn 735	
			740					745					750	Gln	
		755					760					765			Glu
	770			_		775				_	780			Leu	
мес 785	HIS	vaı	Asp	Arg	790	Pro	Gin	GIU	ser	795	vai	PLO	Val	Arg	800
				805					810					815	Tyr
			820					825					830		Ala
		835					840					845			Gln
	850					855					860				Val
Val 865	His	Leu	Ala	Arg	Asn 870	Leu	Ile	Tyr	Phe	G1y 875	Phe	Tyr	Ser	Phe	Ser 880
				885					890					895	
			900					905					910		Asp
Gly	Ser	Asn 915	Asn	Val	Met	Arg	Thr 920		His	Gly	Val	Gly 925	Glu	Met	Met
	930					935					940				Pro
Asp 945	Ala	Gln	Pro	Ser	Val 950	His	Pro	Ser	Lys	Gln 955	Ala	Ser	Pro	Gly	Glu 960

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Glin Glu Asp Val Thr Val Met Asp Thr Lys Leu Lys Val Ile Glu Ile
                               970
              965
Leu Gln Phe Ile Leu Ser Val Arg Leu Asp Tyr Arg Ile Ser Tyr Met
                           985
Leu Ser Ile Tyr Lys Lys Glu Phe Gly Glu Asn Asp Gly Asn Gly Asp
                                        1005
                        1000
Pro Ser Ala Ser Gly Thr Pro Glu Thr Leu Leu Pro Ser Ala Leu Val
                    1015
                                      1020
Pro Asp Ile Asp Glu Ile Ala Ala Gln Ala Glu Thr Met Phe Ala Gly
                                  1035
       1030
Arg Lys Glu Lys Thr Pro Val Gln Leu Asp Asp Glu Gly Gly Arg Thr
                              1050
            1045
Phe Leu Arg Val Leu Ile His Leu Ile Met His Asp Tyr Ala Pro Leu
                  1065
          1060
Leu Ser Gly Ala Leu Gln Leu Leu Phe Lys His Phe Ser Gln Arg Ala
                                         1085
      1075
              1080
Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val Ser Asn Gln
          1095
                                      1100
Asp Val Asp Asn Tyr Lys Gln Ile Lys Ala Asp Leu Asp Gln Leu Arg
                           1115
         1110
Leu Thr Val Glu Lys Ser Glu Leu Trp Val Glu Lys Ser Gly Ser Tyr
             1125
                               1130
Glu Asn Gly Asp Met Gly Glu Gly Gln Ala Lys Gly Gly Glu Glu Ala
                                             1150
          1140
                           1145
Asn Glu Glu Ser Asn Leu Leu Ser Pro Val Gln Asp Gly Ala Lys Thr
              1160
                                         1165
      1155
Pro Gln Ile Asp Ser Asn Lys Gly Asn Asn Tyr Arg Ile Val Lys Glu
                                      1180
          1175
Ile Leu Ile Arg Leu Ser Lys Leu Cys Val Gln Asn Lys Lys Cys Arg
                      1195
         1190
Asn Gln His Gln Arg Leu Leu Lys Asn Met Gly Ala His Ser Val Val
             1205
                               1210
Leu Asp Leu Leu Gln Ile Pro Tyr Glu Lys Thr Asp Glu Lys Met Asn
               1225
                                             1230
          1220
Glu Val Met Asp Leu Ala His Thr Phe Leu Gln Asn Phe Cys Arg Gly
      1235
               1240
                                         1245
Asn Pro Gln Asn Gln Val Leu Leu His Lys His Leu Asn Leu Phe Leu
                    1255
                                      1260
Thr Pro Gly Leu Leu Glu Ala Glu Thr Met Arg His Ile Phe Met Asn
     . 1270
                                  1275
Asn Tyr His Leu Cys Asn Glu Ile Ser Glu Arg Val Val Gln His Phe
                               1290
              1285
Val His Cys Ile Glu Thr His Gly Arg His Val Glu Tyr Leu Arg Phe
          1300
                            1305
Leu Gln Thr Ile Val Lys Ala Asp Gly Lys Tyr Val Lys Lys Cys Gln
                        1320
                                          1325
      1315
Asp Met Val Met Thr Glu Leu Ile Asn Gly Gly Glu Asp Val Leu Ile
                    1335
                                      1340
Phe Tyr Asn Asp Arg Ala Ser Phe Pro Ile Leu Leu Asn Met Met Cys
     1350
                                   1355
Ser Glu Arg Ala Arg Gly Asp Glu Ser Gly Pro Leu Ala Tyr His Ile
             1365
                               1370
Thr Leu Val Glu Leu Leu Ala Ala Cys Thr Glu Gly Lys Asn Val Tyr
                           1385
          1380
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
            1400
                                         1405
Val Val Thr His Asp Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Val
                    1415
                                      1420
Asn Phe Val Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
1425 1430 1435
Ile Tyr Thr Ser Asn His Ile Trp Lys Leu Phe Glu Asn Phe Leu Val
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	1445	1450	)	1455
Asp Met Ala Arg 146	_	Thr Thr Thr 1465	Asp Arg Lys	His Ala Asp 1470
Thr Phe Leu Glu 1475	Arg Cys Val	Thr Glu Ser 1480	Val Met Asn 1485	
Gly Phe Phe Asn 1490	Ser Pro Phe	_	Ser Thr Ser 1500	Leu Gln Thr
His Gln Pro Val 1505	Phe Ile Gln 1510	Leu Leu Gln	Ser Ala Phe 1515	Arg Ile Tyr 1520
Asn Cys Thr Trp	Pro Asn Pro 1525	Ala Gln Lys 1530		Glu Ser Cys 1535
Ile Arg Ala Leu 154	0	1545		1550
Val Asp Leu Asp 1555		1560	1565	
Ser Thr Val Gln 1570	Arg Ala Ala 157		Arg Leu Ser 1580	Ala Arg Ser
Gly Pro Arg Phe	Lys Glu Ala 1590	Leu Gly Gly	Pro Ala Trp 1595	Asp Tyr Arg
Asn Ile Ile Glu		Asp Val Val	Ala Ser Leu	
Phe Ser Pro Met 162	Met Gln Ala			Asp Val Leu 1630
Tyr Ser Pro Glu 1635	Leu Leu Phe	Pro Glu Gly 1640		
Cys Gly Ala Phe 1650	165	5	1660	
Glu Lys Glu Glu 1665	Lys Leu Cys 1670	Ile Lys Ile	Leu Gln Thr 1675	Leu Arg Glu 1680
Met Leu Glu Lys	Lys Asp Ser 1685	Phe Met Glu 169		Thr Leu Arg 1695
Lys Ile Leu Leu 170	0	1705		1710
Asn Gly Pro Leu 1715		1720	1725	5
Gly Phe Thr Gly 1730	173.	5	1740	
Ile Gln Cys Leu 1745	Leu Asp Lys 1750	Glu Gly Ala	Ser Glu Leu 1755	Val Ile Asp 1760
Val Ile Val Asn			Phe Ser Glu 0	
Leu Gly Ile Ala 178	0	1785		1790
Phe Tyr Gln Gln 1795		1800	1809	5
Val Leu Tyr Asp 1810	181	5	1820	
Val Thr Val Asn 1825	Thr Ile Asp 1830	Leu Gly Ser	Lys Lys Arg 1835	Glu Glu Asp 1840
Ser Asp Leu Met	Ala Leu Gly 1845	Pro Arg Met 185		Asp Ser Ser 1855
Leu His Leu Lys	_	Lys Gly Gln 1865	Leu Thr Glu	Ala Ser Ser 1870
Ala Thr Ser Lys 1875	Ala Tyr Cys	Val Tyr Arg 1880	Arg Glu Met 1889	
Ile Asp Thr Met 1890	189	5	1900	
Ser Ala Glu Glu 1905	Val Thr Met 1910	Ser Pro Ala	Ile Thr Ile 1915	Met Arg Pro 1920
Ile Leu Arg Phe		Leu Cys Glu	Asn His Asn	Arg Glu Leu

Clin Asn Phe Leu Arg Asn Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val 1940   1940   1945   1950   1955   1950   1965   1965   1965   1965   1965   1965   1965   1965   1965   1965   1965   1965   1965   1965   1965   1965   1970		1925	193	0	1935
1955   1960   1975   1980   1970   1971   1975   1980   1970   1975   1980   1980   1995   1995   1995   1995   1995   1995   1995   2000   1995   2010   2015		Leu Arg Asn Gln	Asn Asn Lys		Asn Leu Val
Carre	_	eu Gln Phe Leu			
1985	Gly Leu Gly I		Tyr Ile Asn	Glu Lys Asn	
His Glu Asn Gln Thr Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp 2005   2010   2015   2010   2015   2010   2015   2010   2015   2010   2015   2020   2020   2025   2020   2020   2025   2020   2020   2025   2020			Leu Thr Glu		
The lie lie lie lie lie lie lie lie lie li		In Thr Cys Ile			
Arg Met Asp Leu Val Leu Gln Leu Lys Asn Asn Ala Ser Lys Leu Leu 2035		Ala Leu Ile Leu	Ser Asp Ile		Gly Lys Tyr
Leu Ala Tle Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile 2050  Leu Phe Asn Met Arg Pro Lys Glu Leu Val Asp Val Met Lys Asn Ala 2065  Tyr Asn Gln Gly Leu Glu Cys Asn His Gly Asp Glu Glu Gly Gly Asp 2095  Asp Gly Val Ser Pro Lys Asp Val Gly His Asn Ile Tyr Ile Leu Ala 2100  Lilis Gln Leu Ala Arg His Asn Lys Leu Leu Gln Gln Met Leu Lys Pro 2115  Gly Ser Asp Pro Glu Glu Gly Asp Glu Ala Leu Lys Tyr Tyr Ala Asn 2130  His Thr Ala Gln Ile Glu Ile Val Arg His Asp Arg Thr Met Glu Gln 2145  Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Arg Thr Met Glu Gln 2145  Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys 2180  Val Asn Asp Phe Phe Gln Gln Thr Glu Asp Leu Tyr Asn Glu Met Lys 2190  Tyr Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210  His Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2225  Gly Thr Leu Ser Pro Leu Phe Ser Ala Leu Leu Trp Val Ala Val Ala Leu 2245  Gly Thr Leu Ser Pro Leu Phe Ser Ala Leu Leu Trp Val Ala Val Ala 2260  The Cys Thr Ser Met Leu Phe Phe Phe Ser Lys Pro Val Gly Ile Arg 2290  Gly Pro Thr Leu Ile Leu Leu Gly Ala Ala Leu Tyr Thr Ile Gly Leu 2290  Gly Pro Thr Leu Val Ser Ile Met Leu Arg Ser Ile Tyr Thr Ile Gly Leu 2290  Val Phe Leu Val Ser Phe Val Gly Asn Arg Gly Thr Phe Thr Arg Glu Ser 2230  Fro Phe Leu Val Ser He Val Gly Asn Arg Gly Thr Phe Thr Arg Gly 2290  Z275  Fro Phe Leu Val Ser He Leu Phe Phe Phe Ser Lys Pro Val Gly Ile Arg 2290  Gly Pro Thr Leu Ile Leu Leu Gly Ala Ala Asn Leu Cys Asn Lys Ile 2305  Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Tyr His Val Ala Tyr 2340  Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser 2350  Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser 2350  Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385  Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385  Leu Ala Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385  Leu Ala Leu Ile Leu He Asp Met Ala Phe Leu Tyr His Val Ala Ala 2390  Leu Ala Leu Ile Leu Asn Cly Leu Phe Val His Glu Phe Phe Tyr Ser 2	_	Leu Val Leu Gln			
2005	Leu Ala Ile N		His Asp Ser	Glu Asn Ala	
Tyr Asn Gln Gly Leu Glu Cys Asn His Gly Asp Glu Glu Gly Asp 2085  Asp Gly Val Ser Pro Lys Asp Val Gly His Asn Ile Tyr Ile Leu Ala 2100  His Gln Leu Ala Arg His Asn Lys Leu Leu Gln Gln Met Leu Lys Pro 2115  2120  Gly Ser Asp Pro Glu Glu Gly Asp Glu Ala Leu Lys Tyr Tyr Ala Asn 2130  His Thr Ala Gln Ile Glu Ile Val Arg His Asp Asp Glu Ala Leu Lys Tyr Tyr Ala Asn 2130  Lie Val Phe Pro Val Pro Asn Ile Cys Glu Phe Leu Thr Arg Glu Ser 2165  Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys 2180  Val Asn Asp Phe Phe Gln Gln Thr Glu Asp Leu Tyr Asn Glu Met Lys 2180  Trp Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210  Find Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2225  Gly Thr Leu Ser Pro Leu Phe Phe Phe Ser Ala Leu Lys Tyr Asp Glu Asp Asp Glu Asp Glu Asp Asp			Glu Leu Val		
Asp Gly Val Ser Pro Lys Asp Val Gly His Asn Ile Tyr Ile Leu Ala 2100 2105 2110  His Gln Leu Ala Arg His Asn Lys Leu Leu Gln Gln Met Leu Lys Pro 2120 2125  Gly Ser Asp Pro Glu Glu Gly Asp Glu Ala Leu Lys Tyr Tyr Ala Asn 2130 2135 2140  His Thr Ala Gln Ile Glu Ile Val Arg His Asp Arg Thr Met Glu Gln 2145 2150 2155 2160  Ile Val Phe Pro Val Pro Asn Ile Cys Glu Phe Leu Thr Arg Glu Ser 2165 2170 2175  Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys 2180  Val Asn Asp Phe Phe Gln Gln Thr Glu Asp Leu Tyr Asn Glu Met Lys 2195 2200  Trp Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210 2215 2220  His Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2225 2230 2235  Gly Thr Leu Ser Pro Leu Phe Tyr Pro Phe Gly Asp Asp Glu Asp Glu Asp Glu Phe Ile 2225 2270  Ile Cys Thr Ser Met Leu Phe Phe Phe Phe Ser Lys Pro Val Ala Val Ala Leu Phe 2275 2280 2285  Pro Phe Leu Val Ser Ile Met Leu Arg Ser Ile Tyr Thr Ile Gly Leu 2290  Gly Pro Thr Leu Ile Leu Leu Gly Ala Ala Asn Leu Cys Asn Lys Ile 2305  Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Tyr His Val Ala Tyr 2340 2355  Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser 2350  Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2375  Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385 2390  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Cly Phe Leu Phe Leu Arg Ser Ile Ile Cly Leu Leu Asn Val 2385  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Cly Phe Leu Phe Leu Arg Ser Ile Ile Leu Thr Ala Val 2385  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Cly Phe Leu Phe Leu Arg Ser Ile Ile Leu Thr Ala Val 2385  2390  2395  2400  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Cly Phe Leu Phe Leu Phe Leu Phe Asp Leu Val Tyr Leu Phe Ser Ile Ile Leu Thr Ala Val 2385		Gly Leu Glu Cys			
His Gln Leu Ala Arg His Asn Lys Leu Leu Gln Gln Met Leu Lys Pro 2115 2120 2125 Gly Ser Asp Pro Glu Glu Gly Asp Glu Ala Leu Lys Tyr Tyr Ala Asn 2130 2135 2136 2136 His Thr Ala Gln Ile Glu Ile Val Arg His Asp Arg Thr Met Glu Gln 2155 2160 2160 2170 2170 Lys Tyr Arg Val Pro Asn Ile Cys Glu Phe Leu Thr Arg Glu Ser 2165 2180 2185 2190 Val Asn Asp Phe Phe Gln Gln Thr Glu Arg Asp Glu Gln Gly Ser Lys 2195 2200 2215 Trp Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210 2215 His Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2225 Asn Leu Ala Val Ala Leu Phe Tyr Pro Phe Gly Asp Asp Gly Asp Glu 2245 Gly Thr Leu Ser Pro Leu Phe Ser Ala Leu Leu Trp Val Ala Val Ala 2266 2265 Pro Phe Leu Val Ser Ile Met Leu Arg Ser Ile Tyr Thr Ile Gly Leu 2290 Gly Pro Thr Leu Ile Leu Leu Gly Ala Ala Asn Leu Cys Asn Lys Ile 2305 Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Tyr His Val Ala Tyr 2340 2345 Val Phe Leu Val Ser Phe Val Gly Asn Arg Gly Thr Phe Thr Arg Gly 2325 Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Tyr His Val Ala Tyr 2340 2345 Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser 2355 Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2365 Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2375 Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2375 2380 Leu Ala Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2375 2375 2380 Leu Ala Leu Leu Phe Asp Leu Val Tyr Asn Glu Glu Thr Leu Leu Asn Val 2375 2375 2380 Leu Ala Leu Leu Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val 2385 2390 2395 2400 Leu Ala Leu Phe Leu Phe Leu Phe Ser Ile Ile Cly Phe Leu Phe 2395 2390 2395 2400 2295		Ser Pro Lys Asp	Val Gly His		
Gly Ser Asp Pro Glu Glu Gly Asp Glu Ala Leu Lys Tyr Tyr Ala Asn 2130 2135 2140  His Thr Ala Gln Ile Glu Ile Val Arg His Asp Arg Thr Met Glu Gln 2145 2150 2155 2160  Ile Val Phe Pro Val Pro Asn Ile Cys Glu Phe Leu Thr Arg Glu Ser 2165  Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys 2180  Val Asn Asp Phe Phe Gln Gln Thr Glu Asp Leu Tyr Asn Glu Met Lys 2195 2205  Trp Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210  His Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2225 2230 2235  Gly Thr Leu Ser Pro Leu Phe Tyr Pro Phe Gly Asp Asp Gly Asp Glu 2245  Gly Thr Leu Ser Pro Leu Phe Phe Phe Ser Lys Pro Val Gly Ile Arg 2295  Pro Phe Leu Val Ser Ile Met Leu Arg Ser Ile Tyr Thr Ile Gly Leu 2290  Gly Pro Thr Leu Ile Leu Leu Gly Ala Ala Asn Leu Cys Asn Lys Ile 2305  Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Tyr His Val Ala Tyr 2340  Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser 2350  Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2360  Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2370  Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val 2385  Phe Leu Ala Leu Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385  Leu Ala Leu Ile Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385  Leu Ala Leu Ile Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385  Leu Ala Leu Ile Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2385  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Leu Thr Ala Val 2385  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe Leu Phe Asp Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe Leu Phe Asp Leu Val Tyr Leu Phe Ser Ile Ile Cu Phe Leu Phe Leu Phe Phe Leu Phe Phe Ser Ile Ile Cu Phe Leu Phe Phe Leu Phe Phe Ser Ile Ile Cu Phe Leu Phe Phe Leu Phe Phe Ser Ile Ile Cu Phe Leu Phe Phe Leu Phe Phe Ser Ile Ile Cu Phe Leu Phe Phe Leu Phe Phe Ser Ile Ile Cu Phe Leu Phe Phe Leu Phe Phe Ser Ile Ile Cu Phe Leu Phe Phe Leu Phe Phe Ser Ile Ile Cu Phe Phe Leu Phe Phe Phe Ser Ile Ile Cu Phe Phe Leu Phe Phe Phe Ser Ile I	His Gln Leu A		Lys Leu Leu		Leu Lys Pro
His Thr Ala Gln Ile Glu Ile Val Arg His Asp Arg Thr Met Glu Gln 2145 2150 2155 2160  Ile Val Phe Pro Val Pro Asn Ile Cys Glu Phe Leu Thr Arg Glu Ser 2165 2170 2175  Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys 2180 2185 2190  Val Asn Asp Phe Phe Gln Gln Thr Glu Asp Leu Tyr Asn Glu Met Lys 2195 2200 2205  Trp Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210 2215 2220  His Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2225 2230 2235 2240  Asn Leu Ala Val Ala Leu Phe Tyr Pro Phe Gly Asp Asp Gly Asp Glu 2245  Gly Thr Leu Ser Pro Leu Phe Ser Ala Leu Leu Trp Val Ala Val Ala Val Ala 2260 2275  Pro Phe Leu Val Ser Ile Met Leu Arg Ser Ile Tyr Thr Ile Gly Leu 2290 2295  Gly Pro Thr Leu Ile Leu Leu Gly Ala Ala Asn Leu Cys Asn Lys Ile 2305 2330 2335  Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Trp His Val Ala Tyr 2340  Val Leu Val Cys Met Leu Gly Leu Phe Val Glu Gly Thr Phe Thr Arg Gly 2325  Phe Leu Leu Phe Asp Leu Gly Leu Phe Val Glu Glu Thr Phe Tyr Ser 2350  Val Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2370  Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val 2385  Phe Leu Leu Phe Asp Leu Val Tyr Leu Phe Ser Ile Ile Leu Thr Ala Val 2385  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Cly Phe Leu Phe Phe Tyr Ser 2350  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Leu Thr Ala Val 2385  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Cly Phe Leu Phe Leu Phe Phe Leu Phe Phe Tyr Ser 2350	Gly Ser Asp I		Asp Glu Ala	Leu Lys Tyr	
The   Val   Phe   Pro   Val   Pro   Asn   Ile   Cys   Glu   Phe   Leu   Thr   Arg   Glu   Ser   2175	His Thr Ala (	Gln Ile Glu Ile			
Lys Tyr Arg Val Phe Asn Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys 2180   2185   2190   2190   2185   2190   2190   2195   2295   2200   2205		Pro Val Pro Asn		Phe Leu Thr	Arg Glu Ser
Val       Asn       Asp       Phe       Phe       Gln       Gln       Thr       Glu       Asp       Leu       Tyr       Asn       Glu       Met       Lys         Trp       Gln       Lys       Ile       Arg       Asn       Asn       Pro       Ala       Leu       Phe       Trp       Phe       Ser       Arg         2210       2215       2220       2220       2220       2220       2220       2240         His       Ile       Ser       Leu       Trp       Gly       Ser       Ile       Ser       Phe       Asn       Leu       Ala       Val       Phe       Ile       Ile       Asn       Leu       Ala       Leu       Ala       Val       Val       Ile       Ala       Val       Ala		Val Phe Asn Thr	Thr Glu Arg		
Trp Gln Lys Lys Ile Arg Asn Asn Pro Ala Leu Phe Trp Phe Ser Arg 2210	Val Asn Asp I		Thr Glu Asp		
His Ile Ser Leu Trp Gly Ser Ile Ser Phe Asn Leu Ala Val Phe Ile 2225	Trp Gln Lys I		Asn Pro Ala	Leu Phe Trp	
Asn Leu Ala Val Ala Leu Phe Tyr Pro Phe Gly Asp Asp Gly Asp Glu 2245	His Ile Ser I	Leu Trp Gly Ser		Asn Leu Ala	
Gly Thr Leu Ser Pro Leu Phe Ser Ala Leu Leu Trp Val Ala Val Ala 2260		Val Ala Leu Phe			
The Cys Thr Ser Met   Leu Phe Phe Phe Ser Lys Pro Val Gly Ile Arg   2275   2280   2285   2285	-	Ser Pro Leu Phe	e Ser Ala Leu		
Pro         Phe         Leu         Val         Ser         Ile         Met         Leu         Arg         Ser         Ile         Tyr         Thr         Ile         Gly         Leu         Leu         Cys         Asn         Lys         Ile         Leu         Leu         Gly         Ala         Ala         Ala         Asn         Leu         Cys         Asn         Lys         Ile           Val         Phe         Leu         Leu         Gly         Asn         Arg         Gly         Thr         Phe         Thr         Arg         Gly         Thr         Phe         Leu         Thr         Arg         Ser         2335         2335         2350         2350         2350         2365         2365         2365         2365         2365         2365         2365         2380         2380         2380         2380         2380         2380	Ile Cys Thr				
2305	Pro Phe Leu		Leu Arg Ser		Ile Gly Leu
Val       Phe       Leu       Val       Gly       Asn       Arg       Gly       Thr       Phe       Thr       Arg       Gly         Tyr       Arg       Ala       Val       Ile       Leu       Asp       Met       Ala       Phe       Leu       Tyr       His       Val       Ala       Tyr         Val       Leu       Val       Cys       Met       Leu       Gly       Leu       Phe       Val       His       Glu       Phe       Phe       Tyr       Ser         Phe       Leu       Leu       Phe       Val       Tyr       Arg       Glu       Glu       Phe       Phe       Phe       Tyr       Ser         Phe       Leu       Leu       Phe       Val       Tyr       Arg       Glu       Glu       Thr       Leu       Leu       Asn       Val         2370       2375       2380       2380       2380       2400         Leu       Ala       Leu       Val       Tyr       Leu       Phe       Ser       Ile       Ile       Leu       Thr       Ala       Val         Leu       Ala       Leu       Val       Tyr       Leu	Gly Pro Thr		ı Gly Ala Ala		
Tyr Arg Ala Val Ile Leu Asp Met Ala Phe Leu Tyr His Val Ala Tyr 2340 2345 2350  Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser 2355  Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2370 2375 2380  Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val 2385 2390 2395 2400  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe					
Val Leu Val Cys Met Leu Gly Leu Phe Val His Glu Phe Phe Tyr Ser         2355       2360       2365         Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val       2370       2375         Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val       2385       2390         Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe		Val Ile Leu Asp	Met Ala Phe		Val Ala Tyr
Phe Leu Leu Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val 2370  2375  2380  Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val 2385  2390  2395  2400  Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe	Val Leu Val		Leu Phe Val		Phe Tyr Ser
Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile Ile Leu Thr Ala Val 2385 2390 2395 2400 Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe	Phe Leu Leu		Tyr Arg Glu	Glu Thr Leu	
Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile Ile Gly Phe Leu Phe					Thr Ala Val
			diy Aig Sei		

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Pro Val Thr Gly Asn Asp Gly Val Pro Thr Met Thr Leu Thr Ser Met
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Leu Gly Thr Cys Pro Lys Glu Asn Cys Ser Pro Thr Ile Pro Ser Ser
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Asn Ala Ala Gly Glu Gly Glu Asp Gly Ile Glu Arg Thr Cys Asp
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                                       2475
Thr Leu Leu Met Cys Ile Val Thr Val Leu Asn Gln Gly Leu Arg Asn
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                                   2490
                                                       2495
Gly Gly Val Gly Asp Val Leu Arg Arg Pro Ser Lys Asp Glu Pro
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Leu Phe Ala Ala Arg Val Val Tyr Asp Leu Leu Phe Phe Phe Ile Val
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Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
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Val Ser Phe Glu Glu His Ile Lys Ser Glu His Asn Met Trp His Tyr
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Leu Tyr Phe Ile Val Leu Val Lys Val Lys Asp Pro Thr Glu Tyr Thr
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Gly Pro Glu Ser Tyr Val Ala Gln Met Ile Thr Glu Lys Asn Leu Asp
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                                       2635
Ser Glu Gln Asn Glu Ile Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
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Met Ser Leu Val Lys Gln Leu Ser Gly Gln Leu Ala Glu Leu Lys Glu
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                               2665
Gln Met Thr Glu Gln Arg Lys Asn Lys Gln Arg Leu Gly Phe Leu Gly
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35 40 45
Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Val Cys Pro Met Asn Arg

Tyr Ser Ala Gln Lys Gln Tyr Trp Lys Ala Lys Gln Thr Lys Gln Asp

Lys Glu Lys Ile Ala Asp Val Val Leu Leu Gln Lys Leu Gln His Ala

Ala Gln Met Glu Gln Lys Gln Asn Asp Thr Glu Asn Lys Lys Val His

55

70

90

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Gly Asp Val Val Lys Tyr Gly Ser Val Ile Gln Leu Leu His Met Lys
                           120
                                               125
Ser Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu
                                            140
                       135
Lys Asn Ala Met Arg Val Thr Leu Asp Ala Thr Gly Asn Glu Gly Ser
                   150
                                       155
Trp Leu Phe Ile Gln Pro Phe Trp Lys Leu Arg Ser Asn Gly Asp Asn
                                   170
Val Val Val Gly Asp Lys Val Ile Leu Asn Pro Val Asn Ala Gly Gln
           180
                                185
Pro Leu His Ala Ser Asn Tyr Glu Leu Ser Asp Asn Val Gly Cys Lys
                           200
Glu Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Asn Leu Phe
                                           220
                       215
Met Gln Phe Arg Asp His Leu Glu Glu Val Leu Lys Gly Gly Asp Val
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                                        235
Val Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu
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Tyr Arg Gly Lys Leu Gln Val Phe Leu Arg Thr Thr Leu Arg Gln Ser
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                                                   270
Ala Thr Ser Ala Thr Ser Ser Asn Ala Leu Trp Glu Val Glu Val Val
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His His Asp Pro Cys Arg Gly Gly Ala Gly His Trp Asn Gly Leu Tyr
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Arg Phe Lys His Leu Ala Thr Gly Asn Tyr Leu Ala Ala Glu Glu Asn
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Pro Ser Tyr Lys Gly Asp Val Ser Asp Pro Lys Ala Ala Gly Pro Gly
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Ala Gln Ser Arg Thr Gly Arg Arg Asn Ala Gly Glu Lys Ile Lys Tyr
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Arg Leu Val Ala Val Pro His Gly Asn Asp Ile Ala Ser Leu Phe Glu
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Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Ile Gln Ser
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Thr Asn Ala Pro Ile Asp Val Glu Glu Arg Pro Ile Arg Leu Met
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Leu Gly Thr Cys Pro Thr Lys Glu Asp Lys Glu Ala Phe Ala Ile Val
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Ser Val Pro Val Ser Glu Ile Arg Asp Leu Asp Phe Ala Asn Asp Ala
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Ser Ser Met Leu Ala Ser Ala Val Glu Lys Leu Asn Glu Gly Phe Ile
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Ser Gln Asn Asp Arg Arg Phe Val Ile Gln Leu Leu Glu Asp Leu Val
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Lys Gly Glu Glu Pro Leu Val Arg Leu Glu Leu Ser Asp Gln
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Lys Asn Ala Pro Tyr Gln Tyr Met Phe Arg Leu Cys Tyr Arg Val Leu
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Arg His Ser Gln Glu Asp Tyr Arg Lys Asn Gln Glu His Ile Ala Lys
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Gln Phe Gly Met Met Gln Ser Gln Ile Gly Tyr Asp Ile Leu Ala Glu
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Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
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Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
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                                        635
Asn Arg Ile Ala Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Cys Val
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Leu Asp Pro Lys Asn Ser Asp Ile Leu Ile Gln Thr Glu Leu Arg Pro
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Val Lys Glu Met Ala Gln Ser His Glu Tyr Leu Ser Ile Glu Tyr Ser
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Glu Glu Glu Val Trp Leu Thr Trp Thr Asp Arg Asn Asn Glu His His
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Glu Lys Ser Val Arg Gln Leu Ala Gln Glu Ala Arg Ala Gly Asn Ala
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His Asp Glu Asn Val Leu Ser Tyr Tyr Arg Tyr Gln Leu Lys Leu Phe
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Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile Asp Glu Ile Ser
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Lys Gln Leu Gly Val Glu Leu Leu Phe Leu Cys Met Ala Asp Glu Met
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Leu Pro Phe Asp Leu Arg Ala Ser Phe Cys His Leu Met Leu His Val
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                                            780
His Val Asp Arg Asp Pro Gln Glu Leu Val Thr Pro Val Lys Phe Ala
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                                        795
Arg Leu Trp Thr Glu Ile Pro Thr Ala Ile Thr Ile Lys Asp Tyr Asp
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                                    810
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Thr Met Glu Phe Val Glu Asp Tyr Leu Asn Asn Val Val Gly Glu Ala
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Val Pro Phe Ala Asn Asp Glu Lys Asn Ile Leu Thr Phe Glu Val Val
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Ser Leu Ala His Asn Leu Ile Tyr Phe Gly Phe Tyr Ser Phe Ser Glu
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                                      875
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Ala Pro Ala Ala Val Leu Gln Ala Tyr Glu Glu Pro Gly Gly Lys Asn
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Val Arg Arg Ser Ile Gln Gly Val Gly His Met Met Ser Thr Met Val
                            920
Leu Ser Arg Lys Gln Ser Val Phe Gly Ala Ser Ser Leu Pro Thr Gly
                        935
Val Gly Val Pro Glu Gln Leu Asp Arg Ser Lys Phe Glu Asp Asn Glu
                    950
                                        955
His Thr Val Val Met Glu Thr Lys Leu Lys Ile Leu Glu Ile Leu Gln
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Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Tyr Leu Leu Ser
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                                985
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Leu Asp Arg Ile Gly Glu Gln Ala Glu Ala Met Phe Gly Val Gly Lys
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Thr Ser Ser Met Leu Glu Val Asp Asp Glu Gly Gly Arg Met Phe Leu
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Arg Val Leu Leu His Leu Thr Met His Asp Tyr Pro Pro Leu Val Ser
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Gly Ala Leu Gln Leu Leu Phe Lys His Phe Ser Gln Arg Gln Glu Ala
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Glu Asn Tyr Lys 1105	Val Ile L 1110	ys Ser (	Glu Leu	Asp Arg 1115	Leu Ar		Met L120
Val Glu Lys Ser		rp Val A	Asp Lys 1130	Lys Gly	Ser Va		
Glu Glu Gly Glu 114	Ala Gly A				Glu Ar	g Pro S	Ser
Asp Glu Glu Gly			His Gly	Glu Lys			Asn
Tyr Gln Ile Val					Lys Me	t Cys G	3ly
Val Gly Glu Gln 1185			Gln Gln	_			
Asp Ala His Lys	Val Met L	eu Asp 1			Pro Ty	r Asp I	L200 Lys
Asn Asp Asn Lys							Leu
Gln Lys Phe Cys		sn Pro (	_	Gln Ala			Çys
His Leu Gln Leu	Phe Leu T	1240 hr Pro (		Leu Glu	1245 Ala Gl	u Thr M	/let
1250	1	.255	_	1260	)		
Gln His Ile Phe 1265	Leu Asn A 1270	sn Tyr (		Cys Ser 1275	Glu Il		31u 1280
Pro Val Leu Gln	His Phe V	al His (	Cys Trp 1290		His Gl	y Arg H 1295	lis
Val Gln Tyr Leu 130			Thr Val 1305	Ile Lys	Ala Gl	_	Çys
Tyr Val Lys Lys 1315	Cys Gln A	sp Met 3		Thr Glu	Leu Th: 1325	r Asn A	la
Gly Asp Asp Val		he Tyr <i>1</i> .335	Asn Asp	Lys Ala 1340		ı Ala H	lis
Leu Leu Asp Met		la Ala A	Arg Asp		Glu As		
1345	1350			1355			L360
1345 Pro Leu Met Tyr		Ser Leu V		Leu Leu	Ala Al		
	His Ile S 1365 Val Tyr T	hr Glu I	Val Asp 1370	Leu Leu		a Cys A 1375 ı Leu F	Ala
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395	His Ile S 1365 Val Tyr T O Val Ser V	Thr Glu : al Val : 1400	Val Asp 1370 Ile Lys 1385 Thr His	Cys Thr	Ser Let 13 Cys Ile 1405	a Cys A 1375 1 Leu E 90 e Thr C	Ala Pro Glu
Pro Leu Met Tyr Glu Gly Lys Asn 138 Leu Glu Asp Val	His Ile S 1365 Val Tyr T O Val Ser V	Thr Glu : al Val : 1400	Val Asp 1370 Ile Lys 1385 Thr His	Cys Thr	Ser Let 13 Cys Ile 1405 Tyr Va	a Cys A 1375 1 Leu E 90 e Thr C	Ala Pro Glu
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met	His Ile S 1365 Val Tyr T O Val Ser V Tyr Val A Lys Glu I	Thr Glu I Tal Val I 1400 Asn Phe V	Val Asp 1370 Ile Lys 1385 Thr His Val Asn	Leu Leu Cys Thr Glu Asp His Cys 1420 Asn His	Ser Le 13 Cys Il 1405 Tyr Va	a Cys A 1375 1 Leu F 90 e Thr G l Asp T	Ala Pro Slu Thr
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410	His Ile S 1365 Val Tyr T  Val Ser V  Tyr Val A  Lys Glu I 1430 Thr Leu A	Thr Glu :  Yal Val :  1400  Asn Phe V  415  Tle Tyr :	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu	Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys	Ser Le 13 Cys Il 1405 Tyr Va Ile Tr	a Cys A 1375 1 Leu F 90 e Thr G 1 Asp T p Thr I 15 Arg G	Ala Pro Slu Thr Leu
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met 1425	His Ile S 1365 Val Tyr T  Val Ser V  Tyr Val A  Lys Glu I 1430 Thr Leu A 1445	Thr Glu :  Tal Val :  1400  Asn Phe V  415  Tle Tyr :	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu 1450	Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys	Ser Le 13 Cys Il 1405 Tyr Va Ile Tr	a Cys A 1375 1 Leu F 90 e Thr G 1 Asp T p Thr I 13 Arg G 1455	Ala Pro Glu Thr Leu 1440
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Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met 1425 Phe Glu Asn Phe  Lys Arg Leu Ser 146  Leu Asp Thr Ile 1475	His Ile S 1365 Val Tyr T Val Ser V  Tyr Val A Lys Glu I 1430 Thr Leu A 1445 Asp Pro T O Ser Ala P	Chr Glu :  Tal Val :  1400 Asn Phe V .415 The Tyr :  Asp Met A Chr Leu (  Phe Phe S 1480	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu 1450 Glu Lys 1465 Ser Ser	Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys Tyr Val Pro Phe	Ser Level 13 Cys Ilv 1405 Tyr Va Ile Try Asn Lyv Leu Thr 14 Ser Glv 1485	a Cys A 1375 Leu F 90 E Thr G 1 Asp T D Thr I S Arg G 1455 r Val V 70 L Asn S	Ala Pro Glu Thr Leu 1440 Glu Val
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met 1425  Phe Glu Asn Phe  Lys Arg Leu Ser 146  Leu Asp Thr Ile 1475  Thr Ser Leu Gln 1490	His Ile S 1365 Val Tyr T Val Ser V  Tyr Val A Lys Glu I 1430 Thr Leu A 1445 Asp Pro T O Ser Ala P Thr His G	Chr Glu :  1400 Isn Phe V 415 Ile Tyr :  Isp Met A Chr Leu ( Phe Phe S 1480 In Thr :	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu 1450 Glu Lys 1465 Ser Ser	Leu Leu Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys Tyr Val Pro Phe Val Gln 1500	Ser Ler 13 Cys II. 1405 Tyr Va. Ile Try Asn Lyr Leu Th. 14 Ser Glr 1485 Leu Ler	a Cys A 1375 Leu F 90 E Thr G Asp T O Thr I S Arg G 1455 r Val V 70 L Asn S	Ala Pro Glu Thr Leu 1440 Glu Val Ser
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met 1425  Phe Glu Asn Phe  Lys Arg Leu Ser 146  Leu Asp Thr Ile 1475  Thr Ser Leu Gln	His Ile S 1365 Val Tyr T Val Ser V  Tyr Val A Lys Glu I 1430 Thr Leu A 1445 Asp Pro T O Ser Ala P Thr His G 1 Leu Glu C	Chr Glu :  1400 Isn Phe V 415 Ile Tyr :  Isp Met A Chr Leu ( Phe Phe S 1480 In Thr :	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu 1450 Glu Lys 1465 Ser Ser	Leu Leu Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys Tyr Val Pro Phe Val Gln 1500 Gln Gln	Ser Ler 13 Cys II. 1405 Tyr Va. Ile Try Asn Lyr Leu Th. 14 Ser Glr 1485 Leu Ler	a Cys A 1375 Leu F 90 e Thr G Asp T p Thr I s Arg G 1455 r Val V 70 u Asn S u Gln S	Ala Pro Glu Thr Leu 1440 Glu Val Ser Ser
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met 1425  Phe Glu Asn Phe  Lys Arg Leu Ser 1466  Leu Asp Thr Ile 1475  Thr Ser Leu Gln 1490  Thr Thr Arg Leu	His Ile S 1365 Val Tyr T Val Ser V  Tyr Val A Lys Glu I 1430 Thr Leu A 1445 Asp Pro T O Ser Ala P Thr His G 1 Leu Glu C 1510 Cys Val A	Chr Glu :  1400 Isn Phe V 415 Ile Tyr :  Isp Met A Chr Leu ( Phe Phe S 1480 In Thr :  495 Cys Pro :	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu 1450 Glu Lys 1465 Ser Ser Ile Val Trp Leu Leu Ala	Leu Leu Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys Tyr Val Pro Phe Val Gln 1500 Gln Gln 1515 Met Val	Ser Ler 13 Cys Il. 1405 Tyr Va Ile Tr Asn Lyr Leu Th 14 Ser Glr 1485 Leu Ler Gln Hi	a Cys A 1375 Leu F 90 e Thr G Asp T p Thr I s Arg G 1455 r Val V 70 u Asn S u Gln S s Lys G s Ser A	Ala Pro Glu Thr Leu 1440 Glu Val Ser Ser
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met 1425  Phe Glu Asn Phe  Lys Arg Leu Ser 146  Leu Asp Thr Ile 1475  Thr Ser Leu Gln 1490  Thr Thr Arg Leu 1505  Ser Val Glu Ala  Ala Ile Leu Leu	His Ile S 1365 Val Tyr T Val Ser V  Tyr Val A Lys Glu I 1430 Thr Leu A 1445 Asp Pro T O Ser Ala P  Thr His G 1 Leu Glu C 1510 Cys Val A 1525 Pro Met A	Chr Glu :  1400 Isn Phe V 415 Ile Tyr :  Isp Met A Chr Leu ( Phe Phe S 1480 In Thr :  Iys Pro :  Ing Thr I	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu 1450 Glu Lys 1465 Ser Ser Ile Val Trp Leu Leu Ala 1530 Asp Ala	Leu Leu Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys Tyr Val Pro Phe Val Gln 1500 Gln Gln 1515 Met Val	Ser Lei 13 Cys Ile 1405 Tyr Va Ile Tr Asn Ly Leu Th 14 Ser Gl 1485 Leu Lei Gln Hi Ala Ly Ser Ala	a Cys A 1375 1 Leu F 90 e Thr G 1 Asp T p Thr I s Arg G 1455 r Val V 70 u Asn S u Gln S s Lys G s Ser A 1535 a Leu I	Ala Pro Glu Thr Leu 1440 Glu Val Ser Ger Gly 1520 Arg
Pro Leu Met Tyr  Glu Gly Lys Asn 138  Leu Glu Asp Val 1395  Val Lys Met Ala 1410  Glu Val Glu Met 1425  Phe Glu Asn Phe  Lys Arg Leu Ser 1466  Leu Asp Thr Ile 1475  Thr Ser Leu Gln 1490  Thr Thr Arg Leu 1505  Ser Val Glu Ala	His Ile S 1365 Val Tyr T Val Ser V  Tyr Val A Lys Glu I 1430 Thr Leu A 1445 Asp Pro T O Ser Ala P  Thr His G 1 Leu Glu C 1510 Cys Val A 1525 Pro Met A	Chr Glu in 1400 asn Phe vol. 415 asp Met 16 asp Met 17 asp Met 18	Val Asp 1370 Ile Lys 1385 Thr His Val Asn Thr Ser Ala Leu 1450 Glu Lys 1465 Ser Ser Ile Val Trp Leu Leu Ala 1530 Asp Ala	Leu Leu Cys Thr Glu Asp His Cys 1420 Asn His 1435 Val Cys Tyr Val Pro Phe Val Gln 1500 Gln Gln 1515 Met Val His Met	Ser Lei 13 Cys II 1405 Tyr Va  Ile Tr Asn Ly Leu Th 14 Ser Gl 1485 Leu Lei Gln Hi Ala Ly Ser Al	a Cys A 1375 Leu F 90 e Thr G 1 Asp T p Thr I s Arg G 1455 r Val V 70 u Asn S u Gln S s Lys G s Ser A 1535 a Leu I	Ala Pro Glu Thr Leu 1440 Glu Val Ser Ger Gly Leu

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                 1590
                                   1595
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              1605
                                1610
Leu Val Asp Met Leu His Trp Pro Glu Leu Phe Leu Glu Gly Ser
                            1625
          1620
Glu Ala Tyr Gln Arg Cys Glu Ser Gly Gly Phe Leu Ser Lys Leu Ile
      1635 1640
                                          1645
Arg His Thr Lys Gly Leu Met Glu Ser Glu Glu Lys Leu Cys Val Lys
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                                      1660
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                                 1725
Asp Lys Glu Gly Ala Thr Lys Leu Val Cys Asp Leu Ile Thr Ser Thr
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                                      1740
Lys Asn Glu Lys Ile Phe Gln Glu Ser Ile Gly Leu Ala Ile Arg Leu
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                                   1755
Leu Asp Gly Gly Asn Thr Glu Ile Gln Lys Ser Phe Tyr Asn Leu Met
                               1770 · · · · 1775
             1765
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                        1800
Ser Asp Leu Gly Ser Gln Pro Arg Glu Asp Arg Glu Pro Ala Asp Pro
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                                      1820
Thr Thr Lys Gly Arg Val Ser Ser Phe Ser Met Pro Ser Ser Arg
                 1830
                                   1835
Tyr Ser Leu Gly Pro Gly Leu His Arg Gly His Asp Val Ser Glu Arg
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                               1850
Ala Gln Asn Asn Glu Met Gly Thr Ser Val Leu Ile Met Arg Pro Ile
                           1865
          1860
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                        1880 • 1885
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
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Glu Thr Leu Gln Phe Leu Asp Ile Met Cys Gly Ser Thr Thr Gly Gly
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                                   1915
Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Asp Asn Val Gly Leu Val
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Ile Gln Thr Leu Glu Thr Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
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                            1945
Glu Asn Gln Thr Cys Ile Val Thr His Glu Ser Asn Gly Ile Asp Ile
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                                          1965
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                                   1995
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tggcccctgg gcaattttgt accttgtaat tatcctatgg tgatgctgtt tctcgttgct 9060
aatggcatta gtgcctcgta tcctagtgat aactccaggt ctgtgaacca ttcaaacaac 9120
attcattttt gagacaaagc aactttagtt tcaagggtaa ttttaagctt caaaattaat 9180
catttaaagt atttctttaa gagagccatg ttagaggctc acacgttagc ttgaaaggag 9240
tcgatgaaat aattttttta aagggaactt tttacacgac gtttggaata acagcatatt 9300
gctgaccagt cagtgtcatc tcccaggtga attttgatgt cacgttatag tcaaatgagc 9360
tagetgatgg tttetagatt etetteatet gaaccaacat gatgeagtag gtgagaagtt 9420
attatgcata tatacacata tacatccata taaggcaaag taggagctgt ccccttagga 9480
tgcatagctg cccccttagg gtgcagagct caacactgac agtgctgttc tgagagagcc 9540
ggaagtgttt tctacctgtt gcttgttttg tacctgggtc tcgttttact agaccatctc 9660
tgcacaaaag tttaaaaaat gaaccgtaag cagagttctg aagcaagtca agtttgtaag 9720
tgcatacctg aaattattta ataaatgacg cagaatact
                                                                9759
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<210> 23
<211> 2710
<212> PRT
<213> Artifical Sequence
<220>
<223> Description of Artificial Sequence; Note = synthetic construct
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<400> 23 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser 10 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu 25 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn 40 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly 105 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser 120 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys 135 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp 150 155 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val 165 170

```
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
                            200
       195
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
                        215
                                            220
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
                                        235
                   230
Arg Leu Phe His Ala Glu Glu Glu Lys Phe Leu Thr Cys Asp Glu His
               245
                                   250
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
                                265
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
                           280
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
                       295
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
                    310
                                        315
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
               325
                                    330
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
                               345
           340
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
                           360
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
                       375
                                            380
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
                                        395
                   390
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu
                                    410
                405
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
           420
                                425
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
                            440
                                                445
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
                       455
                                            460
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
                   470
                                        475
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
                485
                                    490
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
            500
                                505
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
                            520
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
                       535
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
                   550
                                        555
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys
                                    570
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
                                585
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
                            600
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
                        615
                                            620
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
                                        635
                    630
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
                645
                                    650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
```

```
665
           660
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
                           680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
                                          700
                       695
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
                   710
                                      715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
               725
                                  730
                                                      735
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
                              745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
                           760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
                       775
                                          780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
                   790
                                      795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
               805
                                   810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
           820
                              825
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
                           840
       835
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
                                           860
                       855
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
                                       875
                   870
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
                                   890
               885
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
                               905
           900
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
                           920
                                              925
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Phe Leu Pro Met
                       935
                                          940
Thr Pro Met Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
                                       955
                   950
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
                                  970
               965
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
        980
                              985
                                                  990
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
       995
                          1000
                                              1005
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
                       1015
                                          1020
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
                   1030
                                      1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
               1045
                                1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
                               1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
                           1080
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
                       1095
                                           1100
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
                   1110
                                       1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
                                  1130
               1125
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
           1140
                               1145
                                                   1150
```

```
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
                      1160
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
         1175
                                   1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
       1190
                                1195
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
                    1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
                         1225
         1220
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
                      1240
      1235
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
          1255
                                   1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
                       1275
       1270
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
                    1290
            1285
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
                         1305
                                          1310
         1300
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
                                 1325
      1315 1320
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
  1330 1335
                           1340
Tyr Asn Asp Arq Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
1345 1350 1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
                  1370
            1365
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
         1380 1385
                                          1390
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 - 1395 1400
                                       1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
         1415
                                    1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
       1430 1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
             1445
                 1450 1455
Asp Ile Cys Arq Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
              1465
                                 1470
         1460
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
                       1480
                                       1485
      1475
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
                   1495
                                    1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
                                1515
                1510
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
            1525
                             1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
                         1545
         1540
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
      1555 1560 1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
                   1575
                                   1580
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
     1590 1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
            1605 1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
          1620
                         1625
                                          1630
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
```

```
1640
      1635
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
                                   1660
          1655
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
               1670
                                1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Ala Glu Lys Gly Glu Ala Leu
                            1690
            1685
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
         1700 . 1705
Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
                                      1725
                      1720
     1715
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
                                   1740
          1735
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
                                1755
                1750
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
            1765 1770
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
               1785
         1780
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
      1795 1800 1805
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
         1815
                                   1820
Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
                              1835
       . 1830
Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
            1845 1850 1855
Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
              1865
Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
                                      1885
                      1880
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
                   1895
                                   1900
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
               1910 . 1915
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
             1925 1930
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
                                          1950
         1940
                         1945
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
                      1960
                                      1965
      1955
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Gly Leu Tyr
                   1975
                                    1980
Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
                                1995
                1990
Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
                             2010
             2005
Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
                          2025
                                          2030
          2020
Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu
                       2040
                                       2045
Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His
                   2055
                                    2060
Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu
                                2075
                2070
Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
             2085
                             2090
Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
                                          2110
                         2105
Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
                                       2125
                       2120
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```
Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
                                   2140
                   2135
Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
       2150
                                2155
Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
                            2170
         2165
Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
               2185
                                          2190
         2180
Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
                             2205
             2200
Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
                  2215
                           2220
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
                               2235
       2230
Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro
            2245
                            2250
Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu
                2265
         2260
Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
     2275 2280
Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
                          . 2300
                  2295
Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
                      2315
               2310
Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
          2325 2330
Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
         2340
                         2345
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
            2360
                             2365
      2355
His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu
         2375
                                   2380
Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
      2390
                                2395
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
            2405
                   2410
Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp
                2425
         2420
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
     2435
                      2440
                                       2445
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
                   2455
                                    2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Pro Val Glu Glu Thr
      2470 2475
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
                             2490
            2485
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
         2500
                         2505
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
      2515 2520
                                       2525
Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Val Leu Asn Leu
                                   2540
   2530 2535
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
2545 2550 2555
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
             2565 2570
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
         2580 2585 2590
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                      2600 2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
```

```
2615
    2610
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
                                        2635
                   2630
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
                                    2650
                2645
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
                                                     2670
                               2665
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
                                                 2685
                            2680
        2675
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
                                             2700
                        2695
Asn Pro Gln Gln Pro Ala
                    2710
2705
<210> 24
<211> 6
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence; note =
      synthetic construct
<220>
<221> VARIANT
<222> 2, 4, 5
<223> Xaa = any amino acid
<400> 24
Gly Xaa Gly Xaa Xaa Gly
<210> 25
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; note =
      synthetic construct
<400> 25
Arg Arg Asp Ser
<210> 26
<211> 4
 <212> PRT
<213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence; note =
      synthetic construct
 <400> 26
 Arg Arg Glu Ser
 <210> 27
 <211> 4
 <212> PRT
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<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; note =
      synthetic construct
<400> 27
Arg Arg Asp Glu
 1
<210> 28
<211> 4
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence; note =
      synthetic construct
<400> 28
Arg Arg Glu Glu
<210> 29
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; note =
      synthetic construct
<400> 29
Arg Arg Glu Ala
<210> 30
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; note =
      synthetic construct
<400> 30
Arg Arg Asp Ala
<210> 31
 <211> 48
 <212> PRT
 <213> Artificial Sequence
 <223> Description of Artificial Sequence; note =
       synthetic construct
 Gly Tyr Gly Glu Lys Gln Ile Ser Ile Asp Glu Leu Glu Asn Ala Glu
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